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Stock and the Grasses as Against Tobacco.

Messrs. Editors American Farmer:

Allow me to supplement my article in the 15th July issue by a few additional facts and arguments suggested to my mind by subsequent observation and reflection. I observe in the first place that another failure of the tobacco crop in this dark tobacco region furnishes additional evidence of the necessity of the abandonment of the tobacco crop. The logic of facts, and the necessities of the situation, cannot be resisted any longer, and our people who are always conservative, and averse to radical changes and innovations are now forced to the conviction that the tobacco crops must be given up, and something else substituted in its place. Two prominent substitutes, cotton, and stock raising, have been proposed, and their respective merits canvassed. In the Southern counties of Virginia cotton has been successfully tried, and there perhaps it is best suited to the soil and climate. But in the more Northern counties of the State, although Cotton may be grown successfully, stock is preferable. Here stock has one most decided advantage over cotton, and that is, it affords greater facilities for making manure, and the improvement of our lands. Cotton like tobacco is an exhausting crop, and when it is extensively cultivated requires heavy outlays in artificial manures. The lands of Eastern Virginia have been much run down and exhausted under the skinning system incident to tobacco culture, and the first and most important work to be done here is to resuscitate these worn out lands, and make them yield some income; for at present they are not only unproductive, but are a charge upon their owners. All must admit that stock raising furnishes the best means for the accomplishment of this most important end, whilst at the same time, it is equally if not more remunerative. When one comes to compare the gross receipts of a tobacco farm with those of a stock farm, this will not seem to be the fact. But where an account of profit and loss is kept, and a balance struck at the end of the year, it will be found that stock pays the most profit, and this results mainly from the fact that the latter is far less expensive. The cost of working a stock, is hardly one half of that of a tobacco, farm. And here I am reminded of the main argument that is commonly used in defence of tobacco culture, and it is this, that it is the only reliable money crop, that it brings more money than any other, and that it comes in a big lump that does some good. This is a very delusive argument, for if this crop yields a big lump, it requires as big or a bigger one to make it. The only difference is that the outcome goes out in driblets, whilst the incomes return in a big lump. What does a man gain by making a big crop of anything, if it cost as much or more to make it, than it brings in the market. A big crop may tickle the pride and serve to brag about, but it puts no money in the pocket. When the account of profit and loss comes to be closed the balance will turn up on the wrong side. It will be found on the debit instead of the credit side.

In all business enterprises the eye of the master, should keep a strict watch over the account of profit and loss, for it is the profit, that the farmers need and not merely a big crop.

The writer was brought up in the mercantile business under one of the best and most systematic business men that he ever knew. Book keeping was his pride and hobby and he understood it perfectly.

The profit and loss account was the most important and conspicuous one on his books. It was the great center and objective point to which all the others gravitated. The balance sheet was made out from this account, and this told him what he was about, what he was doing.

As observed in my former article, sheep husbandry may be made exceedingly profitable in this portion of Virginia. The face of the country is beautifully undulating, affording ample drainage, and with the exception of a few districts that have been neglected, the lands are generally elevated and dry. The climate is mild and pasturage suitable for sheep, cheap and abundant. Sheep thrive best in a dry climate and on a dry soil, and the sheep is the only thing that thrives in the midst of a drouth. Even during the terrible drouth of last year the writer had scarcely a sheep in his flock that would not have made a good mutton.

These are in Eastern Virginia an immense quantity, of what is called "old field lands" too poor for cultivation and are generally lying idle and unproductive. These lands may be made to yield a handsome income if sheep were put upon them, for they furnish excellent pasturage for sheep. Persons owning such lands and who design putting sheep upon them, should divide them into two or more fields with good enclosures, so as to furnish suitable shifts for the sheep, for they will not thrive if kept upon the same field too long, and they require an occasional change to keep them in a healthy condition.

There is no pursuit that is entirely free from trouble and difficulty, and there are some incident to sheep husbandry as well as others. Dogs and negro thieves are the main enemies of the sheep here. The best and most effective means of relief from these, is to pen the sheep at night in a lot as near the homestead as practicable. The cattle should be penned in the same lot, for dogs will scarcely ever attack sheep when penned with cattle. The sheep should also have bells put on a few of them which serve to keep off thieves. The writer has kept up this practice for many years, and he has not lost a sheep by these depredators for three or four years.

Notwithstanding the fact that this portion of Virginia is so well adapted to sheep raising and that they can be raised so easily and and so cheaply and so profitably withal, there is not one farmer in ten here who has a flock. Nothing pays better, and if they receive due attention and care will pay a profit of 100 per cent. per annum. Every farmer should keep sheep, and even those who continue the cultivation of tobacco can do it without any additional outlay of labor, and but little of expense. Millions of sheep may be raised on these old field lands where only thousands are raised now. Sheep husbandry would not only enable our people to utilize these lands, now lying idle and reproductive, but it would tend to improve them.

In conclusion allow me to urge both planters and farmers to raise sheep; for fifty sheep with due care and attention, will pay more profit than a crop of ten thousand pounds of tobacco at present prices.

To those who propose to abandon the cultivation of tobacco an important question will present itself, and that is what is the best disposition to be made of the manure heretofore monopolized by the tobacco crop? In the opinion of the writer the best thing to be done with it is to apply it as a top dressing to the wheat. Two important ends are accomplished by this. First it increases the yield of wheat, more or less, and second it insures a stand of clover wherever it is applied. It not only feeds the young clover but it acts as a mulch, protecting it from the hot sun and preventing a too rapid escape of the moisture in soil. This top dressing can be made at any time from the seeding of the crop to the first of April. The sooner it is done however the better. But when it is delayed until after winter sets in, the best time to do it is when the ground is frozen. Failing in this it should be done when the soil is dry.

The running over the land by the wagon and teams will not injure either the wheat, or the soil provided it is dry; but care should be taken not to run the wagons up or down the hills so as to make ruts or gullies. The manure must be scattered from the wagons, and by no means thrown out in heaps.

Cumberland Co., Va. WM. HOLMAN.

Experiments with Fertilizers.

Messrs. Editors American Farmer:

In writing the article on the culture of wheat published in your August 1st number, I omitted a very important item, viz: the kind of drill tine I use in seeding. For two years past I have used with great satisfaction the broadcast shovel. I find it far superior to the kind sold with the drills, as it puts the grain in broadcast instead of crowding it in a small trench. The shovel patented by J. H. Shreiner is by far the best I have ever seen. They can be attached to any make of drill and are quite inexpensive (two dollars a-piece).

In giving the particulars respecting my experiments with ammoniated fertilizers, I will start with corn planted upon land that had been farmed by outside tenants until its fertility was so reduced that it was found too unprofitable to continue its cultivation. This particular field I prepared and planted corn on, with an application of about 300 pounds per acre of Ammoniated Bone Black, at a cost of $34 00 per ton. This fertilizer was applied to the entire field, excepting about ten acres which had about 200 pounds per acre applied of South Carolina Rock and Kainit, at $25.00 per ton, prepared by the Maryland Fertilizer Company. The entire field is of the same quality of land as near as I can judge. The result of this experiment was one third more corn where the South Carolina Rock and Kainit was applied than where the Ammoniated Bone Black was used. The ammonia caused the corn to fire badly and materially shortened the crop.

EXPERIMENT No. 2.—Finding the South Carolina Rock and Kainit proved so satisfactory with my corn, I concluded to try five tons on my wheat in the fall of 1880, but knowing that wheat was composed to some extent of different constituents or elements from corn, and that ammonia was thought imperatively necessary to produce a good crop, I purchased five tons of ammoniated South Carolina Rock, four tons of ammoniated Animal Bone, four tons of slaughter house refuse and South Carolina Rock mixed, one ton slightly ammoniated Animal Bone, and —— tons ammoniated Bone Black. I applied the several articles each by itself on the same character of land and the same quantity per acre in each instance, and I am very sure there was not one peck more wheat per acre on the land where the most expensive ammoniated fertilizer was used than where the South Carolina Rock and Kainit was applied. The clover sowed on the wheat in the spring of 1881 was uniformly good over the entire cultivation.

EXPERIMENT No. 3.—The South Carolina Rock and Kainit proving to be much more economical than the ammoniated fertilizer, I used it on one entire field with the exception of about one acre near its centre, in the fall of 1881. On this acre I applied 400 pounds South Carolina Rock ammoniated, at double the cost of the non-ammoniated. At harvest time there was not one particle of difference in the wheat, either in quantity or quality. On another field I used Animal Bone ammoniated, South Carolina Rock ammoniated, and South Carolina Rock and Kainit at half the cost of the two first named. There was no perceptible difference in the yield or quality of wheat, where the same kind of wheat was sowed, and so clearly was this developed that the party who threshed my grain, a very practical New England gentleman, remarked that there would be a great demand for South Carolina Rock and Kainit this fall. This same gentleman has been threshing my grain for the last four years, and as he is a live Yankee, has been watching my experiments very closely, and so thoroughly convinced was he last fall of the superiority of the South Carolina Rock and Kainit over any of the ammoniated fertilizers, he got me to procure for him sufficient to apply to his entire wheat crop. This fertilizer cost him, applied to the land, not over $20.00 per ton. This season he had the opportunity of comparing results with a neighbor who used a forty-eight dollar ammoniated fertilizer. They each used the same number of pounds per acre and seeded the same quantity of wheat. The neighbor's land ought to be the best, as it is river land and owned by a very practical

man who tries to work things to the best advantage. The gentleman referred to raised 100 bushels more wheat (he threshed both crops) than the neighbor who used the forty-eight dollar fertilizer. So thoroughly convinced am I of the uselessness of the artificial application of ammonia to land, that I shall rely in future entirely upon thorough cultivation to attract and retain beneficial atmospheric influences, and when my land is not in active cultivation make it a point to keep it well covered with clover or mixed grasses, lime upon these, and when fallowed, apply South Carolina Rock and Kainit in re-seeding down. Phosphoric acid and potash are the elements most needed in our lands. After these thorough tests I am inclined to give Dr. A. P. Sharp all the credit possible for his long, persistent efforts to establish a fact that would have saved the agriculturists millions if he could have influenced them to abandon the use of an article that has been the ruin of many. To my own knowledge, Dr. Sharp has made a very poor farm one of the most productive of any in the very fertile county of Kent, and in doing so has ignored the application of ammoniated fertilizers entirely, excepting in making experiments. May he be blessed with a long and happy life, and the community he has tried to serve so faithfully be brought to a proper appreciation of his honest and faithful efforts to serve them.

Respectfully yours, T. R. CRANE.
Mantua, Northumberland Co., Va.

Foreign Notes.

From our Paris Correspondent.

OXEN are extensively employed in farming operations; in summer their daily labor is divided into two periods, so as to avoid the hours of highest temperature. Taking 7 to 8 hours a day, as ample for them working, the oxen are yoked at two periods; from 4 to 8 A. M., and 4 to 7 or 8 P. M. White colored oxen support the heat best, as do also those bred in the plains.

M. PASTEUR is prosecuting new experiments bearing upon inoculation against peripneumonia in black cattle; so far his labors lead to the belief, he will be as happy in his new field as he has been in the case of the *charbon* malady. Having stated he required funds to purchase subjects, the sum of 10,000f. was immediately subscribed by agriculturists and societies.

At the Chateauroux cattle show, a very simple and ingenious force pump with plunging piston was exhibited; the piston which acts as handle, working in a small tube sends the liquid into a larger one; the latter is in sections, the joints secured by India-rubber rings; it pumps 100 quarts a minute of wine or well-water; is eleven feet long, weighs 80 lbs., throws a jet of liquid to the height of 23 feet, and costs 50 francs.

THE CROPS.—Despite the prevailing rains, farmers count upon this being a happy season for cereals. The harvest in the South of France is over, but drought has told on the yield. In these regions, canals, to irrigate the parched soils, are sadly needed. Green crops are making up lee way, but would be greatly improved by sun; the vineyards are not likely to realize their promises.

AMERICAN PORK IN FRANCE.—Opinion is not at all satisfied at the Senate throwing out the bill for re-admitting pork from foreign countries. Boussingault, Chevreul and Milne-Edwards, urged good boiling or freezing the pork, as the best plan to counteract the effects of trichine. Mice, it was maintained by Dumas and Milne-Edwards, were among the most prolific agents for propagating trichines; they consumed the diseased pork, and were in turn often devoured by the pigs. Veterinary Inspector Bouley laid down, that the microscope was incapable of detecting the parasite in pork. One fact is clear, that the exclusion of American pork, is a serious blow for farmers with many servants to feed. Agriculturists are commencing to find out that it pays to compress hay, thus rendering it more transportable and capable of reaching a dearer market. The Omnibus Company of Paris has realized last year a saving of 90,000 francs by purchasing forage in the provinces, baling and sending it up to Paris by rail and canal.

MATS FOR FRAMES.—A gardener steeps the mats he employs to protect frames and conservatories between October and May, for 24 hours in a solution of sulphate of copper, in a large hogshead. Having allowed the matting to drain and become half dry, he plunges them for a few seconds in a solution of quick lime. Matting thus prepared will last, instead of one, seven seasons. The cord employed in the matting must not be oiled.

The Deer Creek Farmers' Club.

We had the pleasure of being present at the August meeting of this Association, which was held at the residence of Mr. Thos. A. Hays, near Churchville, Harford county, Md. Mr. Hays' farm, which embraces about four hundred acres, shows many marks of painstaking cultivation, and is evidently in process of rapid improvement. Mr. Hays is a breeder of Berkshires, and his swine as well as his stock cattle and his feeding steers all looked in good condition. The buildings are numerous, commodious and convenient, whilst the grounds around the house are handsomely adorned with shade trees and flower-beds.

In the absence of President Munnikhuysen, Mr. John Moores was called to the chair. Messrs. Archer, Lee and Rogers, the committee appointed to examine the farm and premises, reported, through Mr. Archer, that Mr. Hays had made many improvements on his farm since the club last met there. The chief of these is a hog-house, to accommodate his thoroug'-bred Berkshire swine. The building is complete in all its arrangements and admirably adapted for saving labor. It contains twenty separate pens. Mr. Hays had said that he had sold his best cattle and that those remaining were very poor, but the committee found his cattle looked well. Notwithstanding the dry weather, Mr. Hays had two three-horse plows at work. The grass fields around the house look well. Mr. Hays has improved the place greatly since he took it and deserves much credit for the manner in which he has brought the place up to a high state of fertility.

Mr. Lee added that Mr. Hays had built a good-sized tenant house, for the purpose of boarding his hands, single or married. He has a steam arrangement for preparing food for his hogs, and his osage orange hedges are flourishing.

Mr. Rogers asked Mr. Hays how he liked barbed wire fences. The latter replied that if short of fencing material he would use it for outside fences, but would not use it for cross fences.

The question selected by Mr. Hays for discussion was "Exhaustion of Soils." The topic was one indeterminate in its scope and involving questions of chemistry so that the members generally confessed their inability to discuss it thoroughly.

Mr. Hays said that some people thought land needed rest. Others thought land should be worked year after year, getting all out of it you can. He opposed this idea. Our lands sometimes need rest, as human beings do, or at least change of occupation. In the period of rest from active cultivation they should be covered with grass, and as Mr. Lee would say, have in the meantime plenty of cattle on them. If not covered with grass they should be covered with something else, straw for instance, to shade the land

R. John Rogers said it did not appear that lands in this section need rests as much as plant-food. No land needs "rest," if judiciously farmed. Simply resting the land will not improve it. A regular system of farming and a liberal application of fertilizers, in the way of clover sod, &c., will prevent the exhaustion of soils better than rest. Lands that appears to need rest most are those that have been worked hard and lightly fertilized. If land is cropped for four or five years and then allowed to lie in grass the same length of time it will need no rest. He did not think land improved so much by lying long in grass as by proper cultivation.

A. M. Fulford said there were two ways of deteriorating the soil—one by working and the other by not working. That is, you may temporarily exhaust the natural fertility of the soil by injudicious working, or you may temporarily exhaust it by not working it at all. He had noticed in the South a cotton field, turned out to rest, which was washed into gulleys. Wherever a sedge plant had taken root the land was not washed. That soil had deteriorated by rest. All our lands contain, in a greater or less degree, elements to produce all crops. Different crops exhaust the soil of different materials. Therefore some soils are better adapted for some crops than for others. Soil needs no rest if judiciously cultivated. It needs rest to accumulate a sufficient amount of available matter for certain crops. These elements are restored by the disintegration of the soil, by the action of the air, &c., which effects a chemical change in the elements already in the soil, converting them into plant food. By rest he did not mean taking off grass. He did not think it well to let the period of rest continue too long. Only a certain amount of the lacking elements will get into condition to make plant food quickly. Farmers should know what their crops require and supply by judicious cultivation and the application of manures what is lacking in the soil. This could be found out only by experiment. Every farmer should have a half or a quarter of an acre for experimental purposes, upon which to try the effect of certain fertilizers on the various crops grown.

Wm. Webster knew that soil could be exhausted by injudicious farming, but did not think it could be built up by rest. Letting land lie in grass without top-dressing will not benefit it much. If land is occasionally seeded in clover it will not deteriorate. Some land will deteriorate by plowing too shallow, causing it to wash; other land will deteriorate by too deep plowing.

W. W. Castner said that his idea to prevent the exhaustion of soils was to apply to each crop what it requires. Chemistry tells us what plant food will raise wheat, but cannot tell us what elements are wanted in the land for a crop of wheat. Mr. Castner had an article read showing the vast amounts of plant food annually carried out of this country in various crops, and yet the soil is not exhausted, but by proper applications of fertilizers can be made to produce more than ever before.

John H. Janney said there are many ways of exhausting the soil, such as slovenly and bad cultivation, but he did not believe with proper cultivation soil would be exhausted. Soils vary in character. One soil, naturally good, would improve when not cultivated, while another, naturally bad, would deteriorate. Grazing heavily while not cultivating is not resting land. The only reason he would advise allowing land to lie idle occasionally, is that they may settle and not become liable to washing. By plowing every year, fertilizing judiciously and turning under green crops, say of rye or clover every three or four years, land will improve. Commercial fertilizers will supply mineral matter to the soil, but not vegetable matter.

Judge Watters said he had no sympathy with those who try to prove that the fertility of the soil is constantly going into the bottom of the ocean. The idea that for every blade of grass eaten an equivalent amount of the elements it contains must be immediately returned to the soil, he did not think was in accordance with the laws of God. As for rest, nature provides that in the change of seasons. The elements of fertility are somewhere, but the laws governing their restoration to the soil are not understood. He had seen an old meeting house, that had stood a hundred years, torn down. The soil under it for two feet was so rich that it was hauled out on the fields and wherever put it acted like guano. He could not account for the manner in which this soil had become rich. Leave a stone pile on a field for a time and upon plowing the land you will have a good crop. If rest alone is required some sedge fields ought to be garden-spots by this time. Of course we can not take from the soil constantly without diminsing its fertility, but certainly there is some provision of nature by which we are not required to restore as much as we take off. The subject, he acknowledged, was connected with a great deal of mystery on all sides, but if you farm properly, keep the ground from washing and fertilize with such elements as are within your reach, your land will get no poorer. It will get no richer by getting a good growth of sedge on it and letting it rest.

James Lee said he did not see how land would improve by rest.

Thomas Lochary said land would not deteriorate while in clover, but let it stand after the clover runs out and he did not think it would improve.

Samuel M. Lee said there was scriptural authority for resting the soil at regular periods. Experience proves that if ground is cultivated without being fertilized or planted it will deteriorate as much as if a crop were taken off. A certain amount of rest is necessary to soil in order to allow the disintegration of particles of the soil to furnish elements for future crops. The effect of rest varies on different soils. Some soils, if put in a moderate state of fertility and allowed to rest, will go back. Other lands in the same state of fertility might improve by rest. There is an improvement of land under shade, which is attributable to various causes. No doubt the decay of vegetable matter improves land, but where this does not take place the growth and decay of animalcule affords improvement.

Albert Neilson had seen market-gardens near the cities cropped year after year and apparently improved, but not without the application of manure for every crop; but if you try to rest a sedge field you cannot improve it.

R. Harris Archer said that if you farm in the regular way, with a rotation of corn, wheat, and clover—every field remaining in pasture three or four years, your farm will be in better condition after ten years than if you were to plow the entire farm every year. He has a field that has not been plowed since 1867 or 1868, and it is better now than it was 14 years ago. Constant cultivation may do on level lands but not in a hilly country.

James H. Ball said he did not know what was meant by resting land. If he had a piece of land in good condition he would rather have it grow a crop of corn than to "rest" by growing a crop of weeds. He had known a piece of land which was not plowed, but mowed two or three times, and it got poor. On the other hand he had seen a piece of land, in high cultivation, fenced in and allowed to "rest" from cultivation or mowing. To his surprise in a few years it produced sedge, none of which was within three or four miles of it. If he had a field of a given amount and wanted to go away for ten years, he would rather let his neighbors pasture it than to fence it and let it lie idle. Land will deteriorate by cropping too closely, and also

by rest and protection from animals. He was satified that active cultivation during the past 12 years had improved the land in this section.

John Moores said his practice agrees with Mr. Ball's theory about pasturing. When he began farming in dividing a field of 60 acres one part was left in permanent pasture, on which stock constantly kept the grass short. The other portion of the field was farmed in his regular way, being plowed every seven years. In 14 years 3,000 lbs. of bone per acre were put on it. Then a portion of the permanent pasture, which had had nothing applied to it, was added to the field, and the strip added produced better corn than the other—all being fertilized alike.

Judge Watters said he hoped it would not be understood that the club undertook to argue that land might be made rich by taking crops off and putting nothing back, but it was meant that by judicious farming land might be made richer. Take a field, plow it up; put nothing on it; sow clover and plow under the crop; sow clover again and you will have a larger crop than before; plow that crop under again. Your land will then be in condition to raise other crops. The elements of fertility are derived from the subsoil and the air.

The club then adjourned to meet at John Moores', Big Woods, September 23d. Subject "Weeds."

How the South May Become Rich and Independent.

These are the views of the agricultural editor of the New Orleans *Picayune:*

The South evidently can never become prosperous and independent through large plantations and colored labor. It can become rich through small farms, mixed farming and intelligent labor, together with its factories, its mines and its forests. The mud-sills of the whole superstructure of prosperity in the South are mixed farming and intelligent agricultural labor. This opens the door to manufacturing, mining and the unveiling and utilizing of all the valuable resources of the South. Southern prosperity in agriculture will draw capital and enterprise from abroad, as well as create and stimulate them at home.

But how is this intelligent labor to be brought about? We mean general and almost universal industrial intelligence among the farmers of the South; we do not question that all of these States have very many farmers whose intelligence and enterprise will compare favorably with those of any other portion of the United States.

The South suffers severely to-day, and will continue to suffer, by her neglect to teach Southern boys thirty, forty and fifty years ago how to work, how to make a living at farming, horticulture, stock-raising or some honorable trade, calling or profession that would make them useful to society as well as to themselves. Slavery and African labor formerly stood as a great impediment to the proper training of the boys through successive generations down to the close of the late war.

And how are boys taught farming and useful trades now, in 1882, in the South? Who are their teachers, and what useful and practical lessons do they study in the great industries of the South? How many generations will be left to acquire agricultural knowledge without teachers, acquiring habits and erroneous ideas that will plague them and keep them poor as long as they live?

"Highly intelligent farming will form and fashion beautiful farms, and greatly improve the rural architecture of the South, and this will make farming more and more attractive to the young men. The character and habits of Southern boys, as being formed to-day, will in a great measure be the character of the South thirty or forty years hence, or sooner. If we had thousands of industrial schools in the South at the present time, most of them agricultural schools, with efficient teachers, they would do the country an amount of good which could be represented in part by hundreds of millions of money; but the benefits to coming generations, morally, politically, socially and religiously, would be far greater than that which may be reckoned in gold."

Effect of Dry Weather on Hilled and Level Culture.

The editor of the *Massachusetts Ploughman* thus shows the results of the two systems:—In those sections of the country where no rain has fallen for several weeks, the difference between level and hilled culture, is so marked, that no one can fail to see it. In such localities the potatoes that have been hilled are entirely dried up, and will not pay the digging, except those that were planted early; while those that have been cultivated level are yet in good order; and if seasonable rains come will give a fair yield. What is true of potatoes is true of corn; though, as yet, the injury is just as great; but we have seen some fields of corn in the dry districts that have been hilled so high as to be past recovery, unless heavy rains come at once.

The immense loss which will be sustained this year by the hilling process ought to stir the farmer up to a change; but we suppose but few will realize that they can do anything to carry crops safely through a drouth; yet it is a fact that he who fully understands the best methods of cultivation, will very seldom sustain much loss to his hoed crops, by drouth. His land is kept level and thoroughly pulverized near the surface; always cultivating often enough to prevent the formation of a crust; thus keeping up a constant drought of moisture from below; while he who adopts the hilling system finds it impossible to keep his land well pulverized on the surface. By hilling he scrapes up all the fine earth and places it around the hill, where it soon forms a crust that will shed all of the water that may fall; and the hollows between the hills, not being well pulverized on the surface, bake hard, and thus the whole surface is crusted over, and is so uneven that it is not easily stirred. The effect of this is not only to compel what water that falls to break through the crust in the hollows, and thus descend at once to the subsoil in large streams, where it passes off by the underground streams to the rivers; but the crust also prevents the upward current of moisture, just the same as a crust on the wick of a lamp prevents the upward current of oil; when the oil on the top of the wick is exhausted by the flame, the light goes out and leaves the wick dry; and when the sun burns out all of the moisture in the crust it leaves the soil dry, because the soil has no power to draw moisture from below.

Law Relating to the Highway.

Mr. H. A. Haigh, L. L. B. in the *American Agriculturist* thus defines the law of this subject:

It is a general doctrine of law in this country that the land in the highway belongs to the owner of the land lying along each side. With few exceptions the American farm extends to the middle of the road, and the public has only the right to pass and repass there in an orderly manner, and a right to keep the way in repair. Every other use of the highway which does not interfere with this public right belongs to the farmer owning the adjacent land. He owns the soil, grass, trees, stones, and gravel and everything else upon the surface or under it, and may use them all in any way that does not affect the public right of passage; and the law will protect his ownership in them just as much as though they were inside his fence. No other person has any more right to pasture his stock there than in inclosed lands; nor can he hitch his horse to a tree there without being liable for the trespass, especially if the horse should gnaw the tree or do other damage; he can in fact, only pass orderly along.

As to road fences, the laws do not with the exception of those of New York and possibly Ohio, impose any obligation; and the farmer may, if he chooses, remove such fences, without impairing his right of action against the owners of any domestic animals that enter and do damage by that means.

If a person lets his cattle go in the highway, he is liable for the trespass they commit by simply being there unlawfully; for the grass they consume, for the injury they occasion to the sod or by barking the trees, and for any other damage they may do. If while there they hook, or kick, or bite any person unlawfully using the way, he would be liable for the injury.

Notwithstanding the fact that the farmer owns the lands of the road, he cannot use it himself for any purpose which at all interferes with the public rights there. He cannot put his wood piles, wagons or pig pens there; and if he does and the traveler runs into them in the night and is injured he would not only be liable for the private damage sustained, (Linsley vs, Bushnell 15 Conn. 225,) but he may be indicted for obstructing the public way.

Green Rye as Fodder.

In regard to the actual value of green rye used as a fodder the past season, the following facts may be considered, as given by a writer in the *Times:* Seven young cows in full flush of milk, having calves from two to six months old, and having no distinguishing circumstances by which a change of feed should fail to act upon the product of milk and butter with one more than another, had been fed for some time upon 15 pounds of mixed Clover and Timothy hay and common meadow hay mixed, cut, wetted, and mixed with 10 pounds of mixed corn meal and wheat middlings daily. The yield had been very regularly 112 pounds of milk per day and 48 pounds of butter weekly from the whole seven cows. The rye became ready for cutting on the 10th of May, when the first heads began to appear. The daily ration was 60 pounds, part cut and wetted and mixed with the meal as before, and part fed whole, but all was eaten up clean. The second week after feeding the rye the yield of milk was 168 pounds per day, and the weekly make of butter increased to 65 pounds. It will be seen that the fresh, green fodder, while it largely added to the produce of milk, did not quite increase in proportion to the yield of butter, for while on dry feed 16 pounds of milk made a pound of butter, 18 pounds were required when the rye was fed. As the rye approched to blossoming and became heavier, and the weather became warmer, the ration of meal was decreased gradually until but six pounds of mixed feed were given daily, and at the present writing the yield of milk is slightly decreased, but the weekly churning has undergone no diminution.

The Use of the Roller.

The New England Farmer has a timely article on this subject. Indeed it is almost always timely to talk about the good effect of rolling land. The roller will not make moisture but it will tend to retain some of it that is already in the soil, and its use may make the difference between a crop and no crop on land that is to be seeded down during a dry period. In a soil made compact by the roller, a light shower may afford sufficient moisture to the surface to germinate the seeds and give them a healthy start, while in an over mellow soil they would lie dormant or merely sprout and then dry up and die. The iron roller is far better than a wooden one in every respect. It turns easily, being made in short sections; it is heavy according to its size, and bears harder on the soil it covers. The weight of a large wooden roller is distributed over too much surface at once. The roller is often useful in the spring for compacting the surface of newly seeded mowing or grass fields, sown the previous autumn, and which the frosts of winter have loosened up or torn to pieces. If clover seed be sown on such land the roller becomes almost indispensible, and some farmers practice covering their grass seed with a roller in place of a harrow or brush, which is an excellent method where the soil is sufficiently moist. Another good use of the iron roller is upon mowing lands recently top dressed with stable manure. The weight is needed to press the manure down close to the surface, where it will keep moist, and all the sooner help start the new growth, at the same time leaving the surface smooth for the scythe or mowing machine. It is also used by gardeners to break up lumpy soil and with alternate harrowings to render it fit for receiving the seeds of tender garden vegetables.

Live Stock.

Swiss Cattle.

Messrs. Editors American Farmer:

As some of your readers may be as ignorant as myself, I send a few lines with regard to the above named breed of cattle, of which I had not heard, or at least not taken note, until the recent visit of a friend from New York. He claimed for them the good qualities of the Jerseys with the size of the Durhams or Shorthorns.

On seeing them at his place on the Hudson, I was forcibly impressed with their value as filling a need in our section. Where butter and cream are a specialty, I presume the Jerseys cannot be surpassed, and on rich land and for grazing purposes the Shorthorns are invaluable, but in mixed husbandry, such as followed by the bulk of my fellow farmers, we want cattle good for the pail, the male calves of which will pay for raising, and that have size and fattening qualities when too old for milking. These animals seem, from all I could learn, very much what we need. Coming from a mountainous country, they are hardy, strong, accustomed to great vicissitudes of temperature, and while doing better, of course, on richer food, will thrive on coarse provender. The first importation into this country was a herd of ten cows and a bull, into Massachusetts, in 1870. They are gradually spreading and are highly appreciated wherever they have gone. My friend has a cow, a heifer and a yearling bull. The cow, "Estelle," has given twenty quarts of milk a day, seven and one-half (7½) of which made one pound of butter. The cow "Geneva," of Mr. Aldrich's herd, gave twenty-eight quarts a day for seven days, seven and one-half quarts making one pound of butter. At the Massachusetts State Fair they took the premium under each of the heads of butter, milk and beef.

They are of a squirrel gray color, the only difference in marking being a little more or less brown. The head has rather a peculiar and "foreign" look, a band of black running up from the muzzle to the eye.

My object in this article is to draw the attention of your readers to the subject that those who are particularly interested may make further inquiries. It may be that there are objections to them which an "expert" would ascertain and which escaped my own observation. I have no doubt that Mr. Richard R. Haines, of 54 Worth street, N. Y., would answer any inquiry addressed to him, as while not having them for sale or being interested in them as a commerceal transaction, he is interested in anything that increases the prosperity of farmers, having lived in the country when young.

HENRY C. HALLOWELL,
Rockland Farm; Montgomery Co., Md.

Veterinary.

INFLAMMATION OF THE FEET IN A COW.—The feet should be carefully examined for any nail or other foreign body, or for any point where the quick is exposed or where a crack or breach between the sole and wall may admit dirt or gravel to it. In the absence of any such cause, it may be due to continous and high feeding on grain, with little exercise. Give, first, 1 lb. Glauber's salts and 1. oz. ground Ginger, and follow this up with daily doses of ½ oz. saltpetre for a week or two. The tender feet should be placed in soft poultices or wet swabs, and kept so day and night, while oil of turpentine is rubbed daily on the skin, above the hoof up to the fetlock or dew-claws. When the tenderness has been to some extent removed, remove the poultices, and smear daily with a mixture, in equal parts, of fine turpentine and tallow, still keeping up the turpentine and the saltpetre, with occasional intervals of a day or two.

THRUSH.—For thrush thoroughly clean the hoof, and especially the cleft of the frog, or the depression (commissure) between the frog and the bars, removing all ragged and loose horn; dry the parts thoroughly, then dust in a little of the following powder: Calomel 2 drs., powdered sulphate of copper 2 drs., carbolic acid 10 drops. Cover with tow and a leather sole, and keep from stepping in wet. When the liquid discharge has ceased stuff the cleft with tar, and continue to apply this, if necessary, for a week or two.—*Nat. Live-Stock Journal.*

The Dairy.

Butter Making.

A writer in the New York *World* makes the following suggestions: The quantity and quality of cow's milk, while largely determined by the individual character of the animal, are also greatly influenced by the character of the food supplied. A liberal diet is essential for a full supply of milk. Green fodder is favorable to a large produce, so are also brewer's grains. The quality of the milk is influenced by the richness of the diet. The milk is poorer when the quantity produced is large or the diet insufficient; and richer when these conditions are reversed. A cow is generally in full milk from the second to the seventh week after calving; after this, the milk gradually diminishes in quantity but increases in richness.

The quantity of butter is influenced by the character of the food, some foods producing a hard and some others a soft butter. Rape cake, oats, wheat bran and barley combined with straw chaff, hay and roots are recommended as producers of excellent butter in abundance. During the winter season, turnips flavor milk and butter, therefore, mangels are a better food. Cows in full milk require a tolerably nitrogenous diet; this diet is naturally provided when cows are fed on grass and clover; when hay, straw and roots form the bulk of the food it is imperitive that oil-cake or grain be also employed if an abundance of milk is desired.

When milk leaves the cow it will have a temperature of about 90° F; when set for cream it should be cooled as quickly as possible, as changes in composition occur at a high temperature. The cream obtained from milk set in shallow vessels contains various strongly flavored products of decomposition that deteriorate the quality of the butter. This is due to the large surface of milk exposed to the influence of air and the length of time required for the separation of the cream. The cream from milk set in deep vessels and surrounded by ice (or pure, cold spring or well water) is free from curd, and sweet, as is the cream that is separated by subjecting the milk to rapid revolutions in a centrifugal machine.

An excellent quality can be obtained by churning at a favorable temperature. If the temperature be too low, the butter will be long in coming, and will be hard in texture. If the temperature be too high, the butter will come very speedily, but the product will be greasy and deficient in quantity. No temperature can be fixed as the best at which churning should take place. The proportion of the solid and fluid fats in the milk varies somewhat with the diet of the cows, and this necesitates a change in the temperature. A somewhat higher temperature will be required in winter than in summer; the temperature must also be higher for sour cream than for sweet cream. Generally speaking, perfect sweet cream should be placed in the churn at 52° F, and sour cream at fifty-two to sixty degrees Fahrenheit. When sour milk is churned for butter the temperature must be about sixty-five degrees.

Churning ought always to be stopped as soon as the butter comes, as over-churning spoils the texture of the butter. The butter is then separated from the butter-milk, worked with cold water, and after standing to solidify, is carefully worked and pressed to expell all watery matter; over-working at this stage will also spoil the grain and make the butter greasy. Butter made from perjectly sweet cream keeps far better than butter made from sour cream, as the butter contains acid, a substance very prone to change. Salt is generally added to improve the keeping quality of butter.

Poultry Yard.

Poultry Notes.

I have raised fowls this year for the first time and am indebted to THE AMERICAN FARMER for many valuable hints. I have tested opposite theories, some satisfactorily and some are to be tried again to compare results. My first chicks came out about the last of March. I began with the "no water" plan, and succeeded admirably; then I gave the second hatching water in clean dishes, filled, washed and refilled several times daily. With this brood I had very poor luck—lost nearly all of them with gapes. The third set of young chicks came out about June 1st, and these I fed on milk, sweet or sour, as I had it to spare, and the same varieties of solid food given to the other two sets. With this experiment I am greatly delighted. Not only the chicks, but the old fowls are in fine condition, and there has been an immense profit in eggs. Now I am giving all the refuse milk, butter-milk and clabber to the fowls, and believe that it pays better than given to the pigs. The balance of the feed consists in a variety that would be too tedious to enumerate, except to say that I use very little meal or corn. All the scraps from the table, whether bread, bones, fruit or vegetables, all the refuse from the kitchen, meat trimmings, etc., are given green or cooked to the fowls. If the food is to be cooked, I stir into the kettle bran from wheat or corn, wheat tailings, oats, etc., until it is nearly stiff. Corn or meal are too heating for summer food, and I think cause disease.

With very little care, I have kept entirely free from vermin. The hen-house is thoroughly swept with cedar boughs every other day and the kitchen ashes are well strewed to catch and absorb the droppings. As soon as the young chicks come out the nests are burned and the frames or wooden work anointed with coal oil. They are left to dry a day or two then refilled with straw or pine tags ready for use again, or left empty if not wanted. I have not the kind of houses or arrangements that I think would be best. These are to be matters of future experiments. With only one house for hatching and laying, I think I have done remarkably well, at least with only one year's experience, with odds against me from hawks and weasels. I do not think any department of farming pays like poultry. With regard to the diseases of fowls, I think the "ounce of prevention" the best remedy. Variety in feeding is certainly half the battle. I have tried this with broods raised side by side, giving one the same food every day, and the other the variety. I have treated gapes very successfully, by simply pouring a little coal oil and spirits of camphor over meal, and mixing with warm water into a soft dough. They only taste it, but it seems that they get enough to destroy the mites or worms in the throat. I like the method better than running a feather into the throat. I have a great deal yet to learn, but am satisfied on the question of profit. The guano alone, properly saved, will pay for the feeding, having the eggs and young chickens for clear gain. I have geese and ducks, but these take care of themselves, except their morning feed, and I think they are doing very well.

Clifton, Md. NOVICE.

Poultry for Profit.

For laying properties, says a writer, we consider that the Brown Leghorn and Hamburg varieties stand at the head of the list as best. As between the two varieties named, there is not much choice, unless it be in size of eggs produced. In that case the Leghorns stand first. While there are other breeds that have their merits as egg-producers, we claim the Leghorns, after seven years' experience, have proved the best, being with almost perpetual layers and non-sitters. Their eggs are larger and more nutritious than those of the Hamburgs, and not unlike in size and general appearance those of the Black Spanish, the shell being of chalky whiteness.

The Leghorns come to maturity at from four to five months, and at that age we have had them commence laying, continuing without cessation until the moulting season. They require less time for moulting than the Asiatic breeds, feathering up quickly and without showing any degree of lassitude or weakness in throwing the pin feathers. All that is necessary during the moulting season is to put a few well-rusted nails in their watering troughs, letting nature take care of the rest. As a table fowl the Leghorns stand next to the white Dorking, which is thought by English breeders to be pre-eminent.

Leghorns, when brought to maturity, have dressed with us from four to six pounds each. We have crosses of the Buff Cochin* with Leghorns, yearlings, weigh from eight to ten pounds. This we have found to be the best cross for size and table, if we desire birds heavier than the originals. Our plan has been to select a good, vigorous yearling Buff Cochin cock and place him in a yard with ten or more two-year-old Leghorn hens. We have bred from this cross successfully, getting good egg-producers as well as increase of size. Were we looking to breed for market we should unhesitatingly commend the above cross as being in our opinion the best, and a variety that is raised with the least trouble, inasmuch as they are not liable to the diseases incident to pure-bred fowls. This cross generally proves good egg-producers. Their flesh partakes of the finer quality of the pure-bred Leghorn, and with none of the coarse stringiness of the Asiatics.

[*A much better cross would be to use a Houdan instead of Buff Cochin, as such a cross would produce a much more rapid developing stock, both sides of parentage being quick feathering and rapid growing, the exact opposite of the Buff Cochin.]

IF hens have plenty of coal ashes to wallow in in the hen-house they will not be annoyed with lice.

Onions for Chicken Cholera.

A correspondent of the *Poultry Yard* thus describes his new remedy for chicken cholera: "While our neighbors for several miles around us, have lost nearly all their chickens from the so-called cholera, ours are in fine condition. They were attacked with the premonitory symtoms of the disease, which seemed to be epidemic here, but we cured them and have no trouble with them since, having accidentally found a cure. Cut up onions with food, and administer once a day for several days, afterward once a week will answer. Also mix a little ground ginger with their meal, once every day or two. We also give them a little salt every two or three weeks, which we deem highly necessary, and above all things, keep watermelons, muskmelons and cucumbers away from them. The tops of celery cut up with their food will be found beneficial, and they appear to like it very well. Do not get these statements mixed up. The onions and ginger only for the cholera, the remainder constant attention. Too much whole corn we have found injurious; we give meal, of this only once in three or four days. Raw onions and a very little ginger against the world for curing cholera, if the disease has not been allowed to run too far." We endorse heartily the raw onions and ginger, but have never found melons injurious. Last summer we raised, in an amateur way, nearly three hundred chickens and turkeys. Bushels of melon rinds and imperfect melons of both kinds were thrown to them daily and eaten eagerly. Over-ripe cucumbers and seeds of muskmelons were likewise devoured. We had no losses from any disease.

Pea Fowls.

Excepting the pheasants, which are not at all hardy and very expensive, the peafowl is the handsomest bird under domestication, but it is useless to attempt to raise it where there is not plenty of room, a large lawn or other grass land near by. They want plenty of exercise, and unless they have it will become sickly and die, for they cannot bear confinement. It is not a good policy to attempt to keep them where young chicks are kept, or older ones, either, for that matter, as they are cross to other poultry and usually severe on young chicks, killing off whole flocks at a time if not prevented from doing so. They are very fond of many kinds of vegetables and all kinds of small fruit, and it usually does not pay well to attempt to raise them both on the same place, especially if the place is a small one, and to attempt to restrain them by clipping one wing mars their beauty exceedingly.

Pea fowls generally go in pairs or trios, and when the hen wants to lay she steals her nest, making it where neither man, dog nor her mate can readily find it. In this nest she lays two or three eggs, hatches her young, and then keeps her brood effectually in the back ground until they are well grown, when she gradually accustoms them to come around the house and barn. Occasionally, but not often, two broods are raised in one season though but one bird is the result, from each hen, during a year's labor.—*Poultry Monthly.*

TOULOUSE GEESE when not inordinately forced for exhibition, are hardy, early layers, and reasonably prolific, often raising two broods of goslings a year. The young early take care of themselves on good pasture, and grow with astonishing rapidity. It is not well to let them depend wholly upon grass, but at first to give a little wet-up oat-meal daily, and afterwards a few oats or handfuls of barley, thrown into a trough or shallow pool, to which they have access. Geese bear with little danger, any degree of pampering and stuffing, but this is likely to produce such accumulations of internal fat as to prevent fecundity. These fine fowls attain, on a good grass range, nearly double the weight of common geese.

Horticulture.

The Orchard and Fruit Garden.

As it will not be long until the time for tree-planting is here again, those who expect to plant, either for market or for home use, should make note during the season of fruitage what kinds are best suited to their wants, making proper allowance for the influence of the different kinds of soils on different varieties. This is more specially important with the peach, perhaps, than with most other kinds of fruit. If we were going to set out apples for market purposes, this year's experience would lead us to plant more largely of the "Fourth of July" than of any other kind for first early, and as this kind is not in bearing to any great extent yet, it perhaps would not be amiss to state here its merits as a first early market variety for the benefit of those unfamiliar with it.

First, the tree is a fine grower and comes into bearing young; is hardy, as it withstood with much less injury the severity of the winter of two years ago than did trees of the same age in the same orchard of that *reputed* "Ironclad," the Tetofsky. The fruit is of good size and color, excellent for cooking, but is rather acid for eating from the tree. Some people, however, prefer acid fruits to the sweet ones. It ripens before Early Harvest and is a good annual bearer. All in all, we would place it *first* on the list of early *market* varieties. Tetofsky acquitted itself better this season that ever before in our orchard, which prompts the hope that as the trees attain age it will prove more valuable.

Among the first earlies for general use in the family, if we were confined to but one kind, we would without hesitation select the Early Ripe, which ripens about the same time as the Harvest. For varieties for later and continuous ripening, there are many to select from, and by making notes of their "points of excellence," the purposes for which the planting is intended can be more intelligently and surely served than otherwise. With pears, the Clapp's Favorite proves to be of far more value with us than any other kind for market purposes; fine size and appearance, good quality and very productive, commanding the highest price in market in its season, which is before the Bartlett, and in our judgment is a better pear *every way* than the Bartlett.

This has been an "off year" for the quite early kinds of peaches with us; never before have they behaved so badly or been so loyal to the laws of heredity. Hale's Early, which is conceded to be the parent of all, or nearly all our quite early American *very early* varieties, never rotted much worse than did the Alexander and Amsden this season in our orchard, while the Beatrice and Louise followed closely in their wake. Our chief regret in this relation is that the seed which *produced* both of the latter did not rot in the ground. We discover this season that the *old* Early Stewart—a yellow peach ripening a little after the Ruth, and discarded years ago by market growers on account of its poor shipping qualities—has been kindly treated to a new name—rechristened as "Baltimore Early," and has thereby served somebody the purpose of turning a few dishonest pennies. Still there may be some who will think better of it under its more pretentious name.

What a furore has arisen within the last three or four years about the Chickasaw Plum? To produce a variation from the original type, it is only necessary to grow seedlings from it. They fruit quite young, and should the variation show any marked improvement it is named and propagated. This is indeed a field for very interesting experiment and bids fair now to yield rich reward to the intelligent experimenter, as the greater certainty of a crop is in itself sufficient to give the American preference over the European type of plums, with market growers at least; but as yet "the plum for the million" has not been heard from, but when it is—which will not be in the far distant future—we predict for it a parentage of American type.

Fruit Growers and Fruit Eaters.

Read at the Potomac Fruit Growers' Festival at Glymont, Md., August 18, 1882, by Dr. S. A. H. McKim, Pres., and forwarded for publication in the American Farmer.

Fruit growing and fruit eating hold a compensative relationship to each other; the producer and the consumer a dependence on each other—it is action and reaction.

The grower, stimulated by the beautiful, pride of success, or the mere love of gain, seeks to delight the eye and please the palate by luscious and delicious fruits, that will demand a good and remunerative price; a price which again stimulates to increased endeavors to improve present kinds and introduce new varieties.

In all the business affairs of life, nothing succeeds like success, and fruit growing is a business affair, bringing large sums of money to the successful grower, but larger yet to him who knows how to display neatly and temptingly his products. How pleasing and tempting are the little packages, either basket or bucket, of peaches, with their blushing cheeks partially hidden by a few leaves laid over them. How many annually are sold in these small packages which can be conveniently and easily carried in the hand to our homes to please and surprise the unexpecting inmates, and thus bring joy to the heart and health to the body.

From the day the seed is put into the ground, up through all its stages of development to ripe luscious fruit, yea, to its consumption, fruit is a source of anxious suspense, or of exquisite delight to the producer and to the consumer. With anxious heart, careful watching and skillful trimming, the producer follows with trained eye and dextrous hand the slow growth and gradual perfection of his labors and anxieties; or, in unpropitious seasons, sadly beholds his labors lost, and his fond hopes of success and of profit blighted.

Many are the causes of failure. In early spring late frosts may kill the buds, the droughts of summer may blight the growing fruit, insects of various kinds may infest the trees, sting the fruit, and so worm eaten may it become as to be unsalable or materially affect the price. Vigilance and watchful care may, if not protect against such, certainly lessen the ravages and injuries to the minimum degree.

Thus, the producer, to bring success in the quality of his fruits, and success in the marketing of them, needs: 1st. Healthy trees of desirable kinds. 2d. Suitable soils to bring the fruits to the greatest perfection. 3d. Careful watching and skillful pruning. 4th. Diligence in protecting his trees and fruits from the insects that mar the one and injure the other in the bearing properties and the salable character; and the neatness and taste displayed and care taken in putting the fruit on the market, that when exposed to view, or when advertised on previously established reputation, it will sell itself. And all of these the producer owes to himself for reputation's sake, and owes the consumer for profit.

The consumer asks these from the producer, but in return must pay fair price for fruit or a relatively higher price for poor fruit. The producer cannot continue to raise superior fruit unless his time, labor and the actual outlay of money are reimbursed. Time is money, labor is money, and money has a cash value.

Fruit is *not* a luxury, it is a *necessity, health giving and life sustaining.* The earliest records of man's diet is fruit; and meat, or the flesh of animals, was of a later date and the result of a degenerate and vicious appetite.

The evidence is cumulative and world-wide that the healthiest and longest lived people are those living on fruits and vegetables. Not fruits and vegetables stale and withered, not fruits that have been days picked and traveled miles for a market, but fruits fresh picked and fully ripe—right from the tree to the hand and mouth of the consumer.

Therefore we should not turn contemptuously away from him who may sneeringly say we are fruit eaters, but graciously bow to the compliment, though it be not so intended, and say: "Honor to the honest fruit grower who seeks to supply us with Heaven's first food to man, and all honor to him who excels in this Heaven designated calling of tilling the soil and supplying others with the best and most lucious products of the fields."

Garden Notes.

The late cold spring made everything backward in the Flower Garden as well as the Kitchen Garden, and the beds have been later in getting on their full summer beauty, but the August rains, while temporarily spoiling the bloom of the geranium beds, have brought the carpet beds out in their full splendor.

There is but little now to note among bedding plants this season. Ageratum John Douglass, though not exactly new, is the best dwarf blue Ageratum we have yet tried. The plants do not grow more than eight to ten inches high, and are always covered with bloom. The only trouble with it is that which is common to all Ageratums, the plants in protracted dry weather, in very sunny places, succumb to the attacks of the red spider. It is, however, decidedly the best plant we have for blue lines in ribbon borders. The new Alternanthera aura has been a dissappointment to me. I was led to believe that the plants would put on their golden color as soon as planted out doors, but I find they are among the latest of this family to take on color. They are now, (August 14th,) getting tipped with deep orange yellow, and promise to be very handsome the remainder of the season. We are more than ever pleased with Crotons as bedding plants. We have a bed containing 250 plants, (mainly Interruptum), which is now very bright. Another bed, containing a like number of Acalypha Mosaica, with a centre Euphorbia Atrupurpurea, is also quite striking.

The present rage for single rayed composite flowers, led me to grow some of the so-called "Paris Daisies," Chrysanthemum Annuum. They are very pretty, but my plants proved too short lived to suit my purposes. The Madagascar Periwinkles, *Vinca Major*, are getting to be much more generally used for bedding purposes than formerly, and they are so admirably suited to our hot summers, that they ought to be more generally used when a constant show of bloom is required. The June bloom of roses was the finest I ever recollect, but the bloom of the Teas and other everblooming sorts since then, has been uncommonly poor.

In the fruit garden, while apples and pears are very scarce, we have had fine crops of strawberries, raspberries and blackberries. We have not yet found the perfect strawberry for our soil. One main reliance for fruit is the Crescent seedling, which gives us quantity. If Sharpless would yield better, it would be perfect, as the fruit is very fine in size and very superior in flavor. With us, however, it is too unproductive, and we still seek a better. Strawberries vary so much on different soils, even in the same neighborhood, that an actual trial is the only way to ascertain which is best for any given locality. Grapes both out-doors and under glass promise to be unusually fine. A plantation of out-door grapes of all the leading sorts now in its third season, will probably give us an opportunity to test some of the newer sorts of natives.

In the vegetable garden an unusually fine prospect for a crop was cut short by the drouth in July, and the result is a great proportion of very small potatoes. Everything has been nearly or quite a month late. Early tomatoes, which we usually have in abundance from June 20th, did not put in an appearance until about the same date in July, but the plants treated in an usual manner were a good deal ahead of some plants sown at same time and not stopped. By-the-by, the plant under glass about which I have written before, has produced nearly 150 fine tomatoes since March, and is still vigorous and productive. While tender vegetables are backward, cabbages were as early as usual and uncommonly fine. The prospect for celery at the present time, is better than for three years past. After sundry disappointments with the dwarf sorts, I have gone back to the old giant white solid, as the best for our climate. This and the London Red are the only sorts sown this season. The Golden Wax Bean proves much superior to the Black Wax; and a dwarf variety of the old climbing London Horticultural, is a welcome addition to our list of beans. The season, though backward, will probably prove one of full average productiveness in the vegetable garden and of unusual brilliancy in the flower department. W. F. Massey.

Hampton Gardens, Baltimore Co.

Grape growing in Virginia.

Mr. Oscar Reirson, of Charlottesville, the best posted man on grapes and wine in Virginia, says: "There are now five hundred acres of land in Albemarle county covered with grapevines in full bearing. Two hundred acres more are in vines at different stages of advancement, and it is estimated that the plant this fall will bring the total acreage of vineyards up to one thousand acres. Grape-growing is rapidly becoming one of the leading industries of the county."

"It is stated that white labor, wherever it has been introducod in Accomac and Northampton counties, Va., is pronounced good. It consists principally of Germans. About 150 have been secured in these two counties already, and additional numbers arrive by almost every boat. It is said they are giving entire satisfaction wherever they have been tried. The Norfolk Virginian says it is in this direction that the Eastern Shore ought to look, and that with plenty of labor to till their generous lands the people of that region will find themselves growing richer and more prosperous every year."

The secret of success in small fruit culture, says an authority, is found in stimulation and repression. By the first he means a thoroughly pulverized and enriched soil. This is especially essential to the strawberry, and all the currents. A rampant growing raspberry like the Cuthbert or Turner, and our vigorous blackberries, do not require stimulation, but they do restriction. By restriction is meant the development of fruit rather than wood or vines. Set out a strawberry plant in a very deep, rich, moist soil, and its first tendency is to follow the great law of nature, and propagate itself, but to the degree that it makes plants it cannot make fruit. Cut off every runner and enormous fruit buds are developed. The sap is dammed up as a miller restricts a stream, and the result is strawberries that are double in size and quantity. This is equally true of Raspberries. Currant bushes crowded with wood bear little fruit.

The present peach crop promises to be almost unprecedented in its total yield, and prices rule low.

Kitchen Garden—September.

Turnips may still be sown, but with them as with most other things, the later the seed is put in, the richer the soil should be made, so as to hurry them along. Early in the month sow winter radishes. Onion sets and onion seed, spinach and kale, all for spring use, may go in any time, and early cabbage, cauliflower and lettuce to be transplanted later into their respective winter quarters, should be delayed until the 25th, and then sown in a well-prepared bed. It is next to useless to sow spinach or onions unless on good land well enriched. Sow some rye to cut green as well as to have some straw for mats. My rye straw this year was eight to nine feet high, and will be superior for mat making.

Where celery is intended to be blanched in the field, the earthing up should be delayed as long as possible—say to the 12th or later, in order that it may have the full benefit of the "latter rain." That intended to be blanched in-doors, will require, at the most, only enough of earth to give the plants the tendency to grow upright.

There aught now to be time to make the necessary repairs on greenhouses and frames to collect sods, woods, earth, &c., for the compost heap.

It is also a good time to note, for next year's benefit, whether or not we have sown or planted too much, or too little of any one fruit or vegetable, otherwise the chances are that mistakes of the kind will be repeated.

Gardeners should accustom themselves to measure with the eye an acre of land, also to pace one off readily.

August 12th. Searched in vain for a cabbage worm of any sort in order to experiment with it. Although the worm had already done some mischief, recent rains had destroyed them or driven them temporarily off. What a contrast to last year's experience!

So far as I know my own mind, I do not mean to waste time in future years cleaning old strawberry beds. Now is the time to collect runners enough for spring planting. Heel them in for the winter in a nicely prepared piece of ground, and protect them a little before severe weather, as the ground is liable to heave and expose the roots. It occurs to me, that if a strawberry bed is to remain but one year, it would not be the most profitable way to cut off all the runners. Quantity in this case need not be sacrificed to quality, as first crops, if well put in, yield fruit invariably of good size. A few *raspberry* and *blackberry* plants should also be stowed away for spring wants.

In reply to a lady who would like further hints concerning the management of her flowers, I prefer to write a separate article for the next No. Meanwhile let her nail four boards together so as to enclose a space, say a foot high, and call it a frame. Spread a few inches of soil on the bottom, and two or three inches of sand on top, and put in short cuttings of monthly roses, geraniums, verbenas, etc., such things as can be wintered in a frame or pit. The frame should be set where it will be shaded during an hour or two of the hottest part of the day, and the watering properly attended to. Geraniums will rot if too much water be given. Should the roses by any mishap fail to root, there will be time enough to try again a few weeks later, but *then* the use of the glazed sash becomes almost indispensible.

JOHN WATSON.

TO DESTROY MOLES.—With a small knife cut under and raise one side of the heart of a grain of corn; under the heart place some strychnine; press back the heart; go to where the moles has freshly worked; pierce with the finger to his tunnel; drop the corn into the tunnel; close the hole made by the finger. Do this in several places.

The Grange.

National Lecturer's Communication.

SUBJECTS FOR SUBORDINATE GRANGES FOR SEPTEMBER.

Question.—How to co-operate to best advantage?

Suggestions.—Co-operation means united action; not of a part but the united action of all. A few working members can keep a Grange alive, but to make it a success re quires the united effort of the entire membership. To properly educate the members in a Grange requires the co-operative effort of the whole Grange. If we desire to secure supplies at low rates, we must co-operate by consolidating our orders and business into the same channel. It is only by co-operation that we will ever be able to accomplish any great good for ourselves. And by a strict application of true co-operation in effort in our behalf success will be assured.

Question.—What are the results of co-operation?

Suggestion.—In all efforts and enterprises where the masses have acted together, co-operated success was secured. By co-operation great reforms have been established in governments and trade. By co-operation enterprises that would have been hopeless by individual effort, on account of their magnitude, have been accomplished with ease. On the field of battle the army working best upon the co-operative principle has often gained a victory, although least in numbers. In politics the party which can apply the partisan lash the sharpest, and force strict co-operation of the masses, gains the day. Strict co-operation knows no other result but success. If Patrons and farmers will unite and co-operate together in any good effort they please success is as certain as the effort is made.

Objects and Purposes of the Grange.

An Address by a Sister of Centennial, No. 161, and forwarded for publication in the AMERICAN FARMER.

The members of the Grange are united by the strong and faithful tie of agriculture, and that we mutually resolve to labor for the good of our order, of our country, and mankind. We endorse the motto "in essentials unity, in all things charity," while as God fills our stores with plenty, so should we not forget the destitute and distressed. It also teaches us to be tolerant of the opinions of others, to make allowances for their shortcomings and to seek excuses for their apparent misdoings, remembering when circumstances seem to condemn, "judge not that ye be not judged," which is the true spirit of charity. We ought also to endeavor to advance our cause by endeavoring to create a higher manhood and womanhood among us, to enhance the comforts and attractions of our homes, to allow no season to pass without planting at least, one vine and fruit tree and thereby strenthen our attachment to our pursuits; to foster in our order mutual understanding and co operation, to remember when we want a reaper, a plough, a ton of fertilizer or a single bag, or indeed anything from a lads'y fine cambric handkerchief to a steam engine, that we, the patrons of Maryland, have a house in Baltimore, No. 83½ South Charles street, established by us, and supported by us, where we can get it, as cheap or cheaper than else where, that by making our purchases at our own house, we are strengthening and supporting our own interest, and that when we are dealing with the middle men and with those who would trample our interests beneath their feet, we are a house divided against itself, and must fall. To reduce our expenses, both individual and corporate, to discountenance the credit sytem, and deal alone for cash, is one of the great principles of the Grange. We also propose meeting together, talking together, buying together, selling together and in general acting together for our mutual protection and advancement, as occasion may require. We should also endeavor to secure peace and harmony, good will and vital brotherhood, so that our beloved order shall live forever. A faithful adherence to these principles, will ensure our moral and social advancement. For the advancement of our business interests, we must bring farmers and manufacturers into the most direct and friendly relations possible, we must dispense with the middle men, not that we are unfriendly to them, but because we do not need them; their exactions and percentage takes from our profits; we are not opposed to rail roads, but hail with joy the whistle of the iron horse, as he speeds his course through this broad land from the Pacific to the Atlantic, nor to any other corporation that will advance our industrial interests. We are only opposed to that spirit of management, which tends to oppress our people and rob them of their just profits. We are not opposed to capital, but the tyranny of monoplies. We advance the cause of education among ourselves and for our children by all just means within our power. We emphatically repeat the oft asserted truth, that the Grange is not a political or party organization, but still it gives to every patron the inalienable right which belongs to every American citizen, to take a proper interest in the politics of his country; in other words it is the duty of every member to influence for good, the action of the party to which he belongs. It is his duty to do all he can in his own party, to put down bribery and corruption, and to see that none but competent men, faithful and honest, who will stand by the farmers' interest are nominated for all positions of trust, and to have carried out the principles which should always characterise every patron of husbandry, that the office should seek the man, not the man the office. It is reserved by every patron as the right of a freeman to join with any party that will best carry out his principles. It is an abiding principle with us, to relieve any of our oppressed and suffering brotherhood by any means at our command. And last, but not least, comes the social feature of our order; the founders of the order, doubless regarding it in this light, and knowing that when man is left alone in bachelorhood, even for a limited time, he becomes morbid and selfish, determined to admit woman within its portals, (notwithstanding the slander that had always been attached to her, of not being able to keep a secret) that by her sympathy and kind words she might strengthen and encourage the faint hearted and weary patron, and when our feast days roll round, as they must do in social gatherings, she would be present with her fair hand and dainty taste to arrange the meats and viands for the weary travellers.

The many pleasant acquaintances and friends we make in the Grange is one of its most enviable features. Since I have been a member of it, I have made friends all over this State, and when, as each meeting of the State Grange approaches, I look forward to it with feelings of the greatest pleasure, to meet those friends whom I only see once a year, and whom I would never have known but for the Grange. I hope you will excuse all my errors and look upon my humble effort with charity, knowing that it was a matter of duty and not pleasure which called it fourth. Imploring the continued assistance of our Divine Master to guide us in our work, we hereby pledge ourselves to faithful and harmonious labor for all future time.

The Late Dickinson Gorsuch.

At a meeting of Glencoe Grange, Patrons of Husbandry, of which the late Dickinson Gorsuch was Worthy Master, held at the hall in commemoration of his death, the following address was made by worthy brother Dr. M. Merryman and ordered to be spread upon the minutes of the Grange and published, and the succeeding expression of the Grange's sorrow for his death to be recorded in its journal.

W. C. C. STEWART, *Secretary.*

A memory is near to us, and a sad tenderness rests about the hearts of us all to-day. We often hear of a "presence" that is "sacred," but we to-day know and feel an absence that to us is sacred. The very air of this hall and its environs seem strange and blank as we stand longing for the touch of a vanished hand and listening in vain for the sound of a voice that forever is still. We are the same, but how all about us seems sadly changed. But yet, let us hope and believe that the beautiful spirit of the absent Master dead, as it stands now nearer to the supreme presence of the Great Master of us all, whom he served so well, can see, know, recognize and understand the true and beautiful affection, devotion and heart-bowed grief which we tenderly lay upon our sacred altar to-day as a sad tribute to his virtues and his memory, as we might lay a perennial flower upon his now silent heart that for so many years throbbed with love, kindness, affection and tender interest for us all, his dear friends whom he loved so well. Peace and Rest! and Honor and Love!

If a noble example of the true and the good is worth anything to us in this sad life of ours, to encourage, elevate and ennoble, we have it in the well-rounded life the dead Master has left us; and what grander or nobler legacy could be left to us? A life, it is true, that flashed out in the zenith of its vigor and its powers, and yet who shall say it was not better so, perhaps, than to have sunk away in the evening of its decay?

The gaudy glitter of wealth and the world's fame, how it fades into shadow before the presence of this humble life as we all knew it! *Here lies the dead hero*, not to the great world around, *but to us!* We knew him, we, his sisters, his brothers, dear friends and neighbors, and is there one of us all who is not better for thus having known him? And how well we all, too, realize and feel that all of us, his brothers and sisters here together, and, in truth, all his good friends and neighbors outside these halls, could not, can not fill this vacant place; can not fill this vacant chair before us, plain and simple though it be. To us here in this our narrow sphere, it seems harder indeed to fill this vacant chair, now consecrated to this true and manly heart, than for the broad world beyond to refill its far-shining temples of fame and renown.

Let us now raise a marble tablet, a monument here in this hall, to his manly virtues and our memory of them and him. I might say in memory of his manly deeds, his womanly words. Hoping that some one coming after him, seeing, may take heart to take up the burden of humane work so nobly begun, so dutifully borne, that nought but death could wring it from his grasp, the noble *past* Master that now lies dead.

Peace to all that was near to him! Peace and rest to his memory!"

"In the death of Dickinson Gorsuch, a brother esteemed, a master looked up to, a friend beloved, Glencoe Grange mourns a loss irreparable. A good man rests from his labors—labors never undertaken to compass selfish ends, but always for the advantage of his fellows: mankind were his brethren; his field of work, the world.

Impressed by the noble and beautiful example of a consistent life, by the self abnegation of a career of quiet but honored usefulness, by the symmetry of a character whose highest aims were to glorify God, to alleviate suffering, to elevate humanity, to dignify labor, Glencoe Grange places upon record this memorial:—

"Dickinson Gorsuch, by his devout walk and conversation as a Christian, his amiable traits as a man, his earnestness as a Patron, won the respect and affection of all who knew him; and whilst this Grange, in common with the entire organization in the State, deplores deeply the loss his death occasions the Order of Patrons in Maryland, we here especially feel the weight of a blow which deprives us of the fraternal counsels, the friendly communion and timely encouragements of a brother whose daily life bore witness to his devotion to principle and his obedience to duty. To his stricken family we extend sympathy in their great bereavement, and in testimony of our unfeigned sorrow, this action is to be spread upon the minutes of our proceedings."

BALTIMORE COUNTY GRANGE, No. 18, will hold its regular quarterly meeting on Thursday, September 21st, at the hall of Patapsco Grange.

Home Department.

Boarding Schools.

The long summer vacations are drawing to a close and our young folks are bewailing the near approach of school opening, and what they find some comfort in calling school drudgery. The young folks, however, are not alone in their troubles about this time and upon this subject, for it brings a good deal of care and anxiety to their parents also. The public school system relieves us from much of the responsibility of former times, in the selection of teachers for our district schools, etc., since it provides us in most cases with fairly good teachers whose capabilities are endorsed by men who know what is essential to the purpose. And our schools are greatly the gainers by the new system, since most of the objections justly urged against it do not apply to the country schools. Our children may now acquire a better education before leaving them than their parents could, even when the old district schools were supplemented by two or three years at an ordinary boarding school, which most comfortably circumstanced farmers used to think all that was necessary for their girls, while the supplemental course was oftenest omitted with the boys, unless the learned professions or the presidency were had in view.

Our boys and our girls may now make a very fair start in life if they have diligently pursued all that was open to them at home, yet there is a worthy ambition among us to give them as much more as we can, and this is what is now holding many persons in a state of anxious suspense who have not been able to make selections suited both to their means and wishes. With most farmers, the outlay required to send children from home to school is a serious matter, and the pity is that the young people so seldom get all the good from the investment, which they might if they realized the effort it cost their parents. But the fact that money is harder for the farmer to procure than for most business men too often induces him to give the preference to the schools which promise the most for the smallest outlay, without sufficient painstaking to ascertain whether these promises are likely to be kept or whether there may not be conditions attending them that will make the school expensive at any price.

It seems to me there is nothing in which we are so trustful as in the matter of transferring our responsibilities in regard to the children's welfare during this period. If time and money only were involved it would be bad enough, since in very many cases both are thrown away, but of far greater importance is their health of mind and body, which are so recklessly jeopardized. It seems almost indelicate when dealing with ladies and gentlemen, as we are supposed to do in negotiating for our children's entrance into their schools, to question them in regard to the provisions for personal comfort or convenience, and yet we would not willingly subject our children to unhealthy sleeping quarters or to poor and insufficient food for the length of time which we propose leaving them at the school, and yet there are very respectable schools where ten or twelve girls are expected to study every evening by one ordinary kerosene lamp, and that at a long table so that not more than half of them can be within reasonable distance of the light; others, where ten or twelve girls are crowded in a room not more than eighteen feet square to sleep, bathe and dress, the beds and two wash stands so completely filling the room as to leave hardly any passage between them. What kind of an atmosphere is that for spending one-third of their time in breathing, and what conveniences for modest girls to attend to personal cleanliness? These are instances taken from schools of very good reputation. Another great defect in ordinary boarding schools is the want of a suitable place for the boys or girls to spend their time when not engaged in study or recreation. Scarcely any of them have a parlor or sitting-room at all corresponding with what the young people are accustomed to, and which I should suppose they were entitled to. Such things are important, as they have a decided effect upon the spirits of children who may be supposed to be more or less affected by home-sickness. I can imagine no more important adjunct to a well conducted boarding school than a room suitably appointed where the whole school may gather at certain intervals to mingle freely with each other and with the teachers, as they may choose to favor them with their presence, with music, games, books and pictures to aid in giving it the character of a refined family circle. Yet such provision, I am sorry to say, is very rarely made, except perhaps on one evening during the week. Even then it is part of the discipline of the school to cultivate company manners.

If we must send our children from home, let us secure to them some semblance of home in the arrangement. Let us be assured of reasonable personal comforts for them and suitable provisions for the care of their persons. Cold sleeping rooms, well ventilated, will not be likely to injure them if they have sufficient covering, but a moderately warm dressing room in necessary to proper bathing and careful dressing. Good food properly cooked, however plain, is also essential to health and a proper mental condition for study. Reasonable times for rising should also be secured to them. One school, which in other respects would be my choice for my daughters, found it necessary, in order to give one of my neighbor's daughters sufficient time for practicing, that she should rise early enough winter mornings to practice before daylight. Who would permit such a thing at home? Of course, the room could not be expected to be warm at that time. If it were anything to give bodily exercise it would not hurt them. To fly about and get the breakfast at that time would probably be a real benefit to most school girls, but to get out of bed and go poking down through cold halls and into a half warmed room to sit at the piano by the hour, is simply barbarous.

I have no wish to disparage boarding schools generally, because I know there are among them some where it is a great privilege to send one's children, but what I aim at is to get the parents to be more careful in their selection, so that they may secure the greatest good for the children in every respect. Where it is possible to know them, we can form some opinion of the merits of a school by the scholars who have been there long enough to have been impressed by its influences. In this way I decided upon the schools for both my boys and girls years before they were old enough to be sent to them, and in neither case was I disappointed. What they learn from books is a small part of the education they will get, and therefore it is equally important, if not more so, to look to the kind of learning they are likely to get outside of their books as to that they are likely to get from within them. None but true men and true women can make the like of our children, nor can we expect those who are neither *ladies* nor *gentlemen* to cultivate such qualities as they do not possess. It is therefore a safe rule to fix upon those whom we are willing should be models for our children as proper persons to whom to commend their training. Having done this, let us teach our children to respect them accordingly, or our precaution is wasted.

The character as well as the privileges of a school should govern our decision as to where we shall send our children, and not alone the cost thereof. Of course, we have no right to go beyond what we can afford, but if we can't afford what is unquestionably for their good we had better keep them at home and spend what we can afford in enlarging their privileges there. The cost of the undesirable school will go a good ways toward securing good reading matter and sometimes procure good assistance in a course of reading from some well educated person in the neighborhood, and also the leisure to make use of these opportunities by hiring assistants to do the work which so often interferes with home efforts of that kind. This, bear in mind, is, instead of poor schools; good ones, are in most cases preferable to anything else.

CERES.

Ivy as a House Plant.

Whoever has visited Europe has beheld with admiration the ivy at its home. House-walls are clad in ivy, and a cosy, homey look it gives to many a building. The church, the castle, and the cottage invite its presence; it revels on the crumbling ruin, and no ruin appears an interesting ruin unless draped with ivy. It also spreads upon the ground and forms a carpet to the shady wood, lays hold upon the trees within its reach, climbs high the trunks of oak and ash, and clothes them every inch. But our American climate denies it the unrestrained luxuriance it enjoys in Europe. As an out-door plant, we use it to cover rocks and walls of masonry that are sheltered from drying winds and warm sunshine, and likewise as an evergreen border in place of periwinkle or sometimes grass. In a sunny exposure it is not apt to thrive well because of the direct sunshine and drouth, but in somewhat shaded situations it may live unhurt for years.

But it is as a house plant that the ivy is most esteemed with us, and justly, too, as it is ever-green and cheerful, thrives well in heat or cold, in light or shade, in sitting-room or cellar. Kept in a shady corner of the room, we may extend its friendly wreaths around our picture-frames, or train them where we will and they resent it not; dust does not affect them badly, for we can wash them clean again; they heed the parching breath of furnace or of stove less than do most other plants except Cactuses; that is, if they are well watered at the root, for an ivy should never be allowed to get dry. Although under favorable conditions they may bear with impunity some 30° to 40° of cold, a sudden and considerable fall in temperature may affect them injuriously.

They are easily propagated from cuttings at any time. They like a rich, open soil, and rather than shift them into larger pots each succeeding year, you may pick out a good deal of old surface soil and replace with fresh earth. In the summer time, if you do not want to keep them in-doors, you may set them outside on the piazza, or plunge their pots in the earth in a shady part of the garden, and see to it that they get lots of water. Or if you live in the city, where you have no outside garden, you may set your ivy in a window-box and let it droop down over the wall like a mantle, for in an upright or downward position the ivy seems to grow equally well. If you winter it in the cellar, keep it in a cool cellar if practicable, but cold or warm, never let its roots get dry.

Ivy sometimes gets overrun with scale, and the only remedy for this is assiduous and repeated washings with soapy water and a sponge. So long as any scales are left so long will they increase in numbers. Dust and dirt of that sort may be washed off with water applied forcibly by the hose or syringe, especially if the leaves have been kept wet for some hours before they are hosed; but no amount of hosing will remove the scale

If your ivy is sick, cut it back considerably, turn it out of its pot and remove most of the old soil, then re-pot it into a smaller pot, well drained, and in fresh soil. Applying artificial fertilizers to an unhealthy ivy is merely hastening its death.

Cut-off sprays of ivy are useful in floral decorations, and last a long time in good condition, and some pretty wreaths and other ornaments are made from ivy leaves. Shoots of ivy cut off and put into bottles of water, as we often do with Wandering Jew, root in the water, and live on and grow.

There are many kinds of ivy, but the ivy we cultivate in our houses is, as a rule, the English ivy (botanically known as *Hedera Helix*) and its varieties. Of these varieties there are broad and narrow-leafed forms and kinds whose leaves are banded, spotted, and blotched with silvery white and sometimes tinted with rose.

Besides the true ivies, we cultivate several other plants also known as ivies; for instance, the Coliseum or Kenilworth Ivy, a delicate little toadflax, which should be hardy in the Middle States, and of which there is a beautiful variegated form; the ground ivy, a creeping herb nearly allied to catnip, and a good plant to grow as a carpet among ferns in a shady rockwork; the German ivy, so well known as a rampant growing house-plant for winter, and as a vine in vases in summer; the Virginian ivy, or Virginian Creeper, so abundant in our woods, and so favored in our gardens as a fast-growing screen or drapery; and the Japanese ivy, which clings to walls of wood, or stone as closely and tenaciously as does English ivy, but it is deciduous.

WM. FALCONER,
in American Garden.

Silk Culture in the United States.

The letter of Mrs. Garfield, the widow of the late President, acknowledging the reception of the silk dress sent to her by the Women's Silk Culture Association, is published in the daily papers. The fabric of this dress was manufactured from silk grown in fourteen States in 1881. Mrs. Garfield says in her letter that "the President regarded this industry with interest from the time it was established, and this, one of its first fruits, shall be preserved both as an heirloom and as a memorial. Had General Garfield's life been spared it would have given me pleasure to have put this fabric into a dress suitable to honor some worthy occasion."

The elegant black brocade silk was enclosed in a fine ebony box, with puffed lining of lavender satin, tied down on the top with broad lavender ribbon. A letter of presentation, stitched with old gold sewing silk on lavender satin and bound in black with velvet, with the following inscription:—"Presented by the Women's Silk Culture Asso- of U. S., 1882," accompanied the gift. The face of the box was fine plate glass, thus giving a view of the fabric without the necessity of opening the box.

We are prompted to call attention to this matter again at this time, to show the progress that is being made in this country in the direction of the manufacture of silk, and particularly to the importance of the success of establishing its introduction, especially at the South. A similar association to the one which has presented this beautiful fabric to Mrs. Garfield is in existence at the South, and Mr. M. B. Hillyard, of Mobile, Ala., to whom has been committed the development of silk culture in the Southern States, has issued a circular letter in regard to the progress made by the Mississippi Silk Company, a chartered organization with headquarters at Aberdeen. He states that he will visit as many of the leading cities and towns of the South as possible the coming fall. He says "if there should be sufficient interest felt to effect an organization, a cocoonery can be established and the basis laid for a development that may lead to very substantial re-

sults. Not only will the community be educated on silk culture, but a filature or reeling establishment may be built to purchase the cocoons, and even a silk manufactory may result. The astonishing progress of silk manufacturing in this country within the last few years; the amply demonstrated adaptation of the climate of the Southern States to sericulture; the cheap lands of the South; most especially the grand opening given by silk culture to the unemployed ladies of the South; the commendation of this industry by unbiassed, studious, competent experimentalists and investigators; the crowning proof of its practicability and profitableness, in the fact that one of the most eminent silk houses in Europe will soon have a business connection with the company in question, all point to silk culture as a lucrative pursuit, and most eligible for Southern ladies, at once easy, fascinating and readily learned. The remunerative aspect and the new field it opens to the intelligent and unemployed among Southern ladies commend the enterprise most especially to the good will of the public, and some of the most advanced thinkers and most public spirited men and women at the South, from philanthropic motives alone, are devoting their efforts to induce Southern ladies to engage in the business, and their efforts are meeting with most gratifying success, several prominent organizations of ladies having been already formed in various Southern cities."

Domestic Recipes.

GRAPE WINE.—Pick the grapes from the stems, mash them, and if you wish to have the wine light colored, strain at once; but if red, then let it stand in a wooden vessel over night before straining. When strained, either use the juice alone or add one quart of water to every three quarts of juice, which is, of course, not quite as rich, but is very good. To every gallon of liquid add three pounds of granulated sugar. Mix well and set in a wooden vessel, open, to ferment about a week, after which skim well and strain into a cask or barrel; leave open a few days then stop it tightly, and don't touch it again for a year if you can avoid it. It will be pretty good in six months, but every day after that improves it.

SWEET PICKLED CANTALOUPE.—Select melons not quite ripe; peel and cut into such size as you prefer, pack into a stone jar, sprinkling a little salt between them, cover fairly with vinegar and let it stand till next day, when the vinegar can be run off. Throw away this vinegar and take three-fourths of the quantity of fresh, to which add to each quart two and a-half pounds of sugar, one ounce of stick cinnamon, one ounce cloves, one ounce allspice; boil and then add the melon, boiling it until a straw will pierce it, skim the fruit out, let the syrup boil a half hour, then pour on the fruit. Tie up and leave it a few weeks before using. C.

RAISED RUSKS.—One pint of bread sponge, one egg, one cupful of sugar, half a cupful of sweet milk, the same of butter, and two teaspoonfuls of baking powder. Stir all well together and let rise till very light. Knead it down and let rise again; mould into bits about the size and shape of an egg, put close together in the pan and let rise until very light; bake longer than common rolls or biscuits—until the top is a dark brown.

SUNSHINE CAKE.—The whites of 11 eggs and yolks of 6, 1½ cups of granulated sugar, measured after it is rolled and sifted; 1 cup flour, measured after sifting; 1 teaspoonful baking powder, sifted with flour. Beat whites to stiff froth and gradually beat in the sugar. Beat the yolks well and add the beaten whites and sugar to them, with a teaspoonful of extract of orange; last, stir in the flour. Mix quickly and well, place in buttered pans, and bake fifty minutes in a slow oven.

Tomato Catsup—Tomato Sauce.

The basis of Tomato Catsup, or Ketchup, is the pulp of ripe Tomatoes. Many defer making catsup until late in the season, when the cool nights cause the fruit to ripen slowly, and it may be it is gathered hurriedly for fear of a frost. The late fruit does not yield so rich a pulp as that gathered in its prime. The fruit should have all green portions cut out, and be stewed gently until thoroughly cooked. The pulp is then to be separated from the skins, by rubbing through a wire sieve, so fine as to retain the seeds. The liquor thus obtained, is to be evaporated to a thick pulp, over a slow fire and should be stirred to prevent scorching. The degree of evaporation will depend upon how thick it is desired to have the catsup. We prefer to make it so that it will just pour freely from the bottle. We observe no regular rule in flavoring. Use sufficient salt. Season with Cloves, Allspice, and Mace, bruised and tied in a cloth, and boiled in the pulp; add a small quantity of powdered Cayenne. Some add the spices ground fine, directly to the pulp. A clove of garlic, bruised and tied in a cloth, to be boiled with the spices, imparts a delicious flavor. Some evaporate the pulp to a greater thickness than is needed, and then thin with vinegar or with wine. An excellent and useful tomato sauce may be made by preparing the pulp, but adding no spices and putting it in small bottles while hot, corking securely and sealing. If desired, the sauce may be salted before bottling, but this is not essential. To add to soups, stews, sauces and made dishes, a sauce thus prepared is an excellent substitute for the fresh fruit. It should be put in small bottles, containing as much as will be wanted at once, as it will not keep long after opening.—*Am. Agr.*

AGRICULTURE IN THE SOUTH.

Its Needs and Opportunities.

BY TH. POLLARD,
Ex-Commissioner of Agriculture of Virginia.

DRAINING.

In our last we were speaking of the improvement of lands by draining. To those designing to drain, we recommend "Waring on Draining" as a guide to their operations. We will say here that *tile* is, as far as we can judge, much the best material for drains. Pine poles and plank are inefficient, after a time, as they decay, they let the dirt in, and if not fixed with much care let it in where the poles come together, even before decay. We have a piece of land which we have effectually drained with tile where the poles had failed to accomplish the object. Stone drains are laborious and more expensive than tile, and unless masonry is employed they frequently become choked by the dirt drifting in. A mistake is frequently made in having tile too small. Small tiles are going out of favor with persons experienced in draining. The main drain, if long, should be six inches in diameter, and the side drains (which should be about forty feet apart) three inches. Where the fall is sufficient they should be let in the ground three and a-half to four feet, and the fall should be one inch to the rod (16½ feet). The distance apart must, of course, be regulated somewhat by the condition of the ground, permanently wet lands requiring them to be closer than where the land is occasionally too wet. Of course, it is not expected we shall go into the details of draining, desiring here principally to impress our readers with the important aid it will give them in the improvement of their lands.

NEW INDUSTRIES FOR THE SOUTH.

The South certainly needs new and diversified industries. To stake all on cotton, or tobacco, or wheat, or corn, is like staking all on the throw of a dice. If fortune is unpropitious, all is lost. If one moneyed crop is trusted to and that fails, the farmer has nothing to buy provisions and clothing for his family with. If he depends on cotton, or wheat, or tobacco with which to purchase corn, and they fail, where is the corn to come from to feed his stock and furnish meal for his family? Of all crops raised by the general farmer, corn is most important. It is "the staff of life," and every farmer in our country should endeavor to raise enough to supply his own use. There is not much danger of suffering where plenty of corn is raised. On cotton and tobacco farms stock is seldom fat, and it is an old adage that "horses will not fatten on bought corn." What shall these diversified crops be? We have already spoken of the great importance of grass as one of our crops and its great neglect in cotton and tobacco regions. Other important crops are *winter* oats, fodder, corn, (particularly for ensilage) Rye, (especially for soiling) sorgham for syrup and perhaps sugar, as well as for soiling, and fruits, among which grapes and apples are most important—the former for all Middle Virginia, Piedmont and the Valley, and the latter especially for Piedmont, the Mountain and Valley regions. There are some modifications of this statement to be made when we come to speak more in detail concerning fruits.

We have at other times frequently expressed the opinion that winter oats for the middle portions of Virginia and we presume the eastern portions of Maryland, constituted a valuable and certain crop. Further south they are considerably raised and their culture is extending into Virginia. Seeded the last of August or first of September, they get well rooted before cold weather and are a very certain crop, which is just the reverse in regard to wheat. Occasionally, in very cold winters, they get killed, but if seeded early they will stand very cold weather. I have seen them killed only once in this vicinity in the last seven or eight years. If they are too forward they can be kept from getting in the joint by grazing, and indeed it is an excellent plan to sow them early with a view of affording winter grazing for cows and sheep. Taking into view their certainty and productiveness, they are more profitable to raise than wheat. One year from four acres I sold $110 worth of oats, (baled) though they were not seeded until the 14th of October, and only one bushel was put to the acre, (under a misunderstanding of the quantity of land) whereas at least two bushels should be seeded, and probably more. Some years since some gentlemen in Georgia, seven in number, members, we think, of a club there, determined to try thick seeding of winter oats, selecting four bushels per acre as the quantity. They were seeded, I think, the last of August. The smallest yield was 80 bushels per acre and the largest 120 bushels. This statement appeared in an article published in the *Southern Planter*. A gentleman of Chesterfield county, Va., tried the experiment of four bushels to the acre last fall. What the result has been I have not yet learned. Another advantage of winter oats is that they will yield good crops on land not rich enough for wheat. Spring oats, we think, should be abandoned. Even in as good a season as this appeared to be the crop was generally a failure.

We alluded to rye as a good crop. We do not regard it as a good market crop, except near cities, where the straw is in demand for collar making, but it is a good crop to raise for farm use, for soiling cattle, and hogs, and horses, coming in as it does, in April, at a time when ensilaged corn-fodder, if used, has probably given out, and when stock, if they have not the benefit of the ensilaged corn, are tired out with dry feed and are very desirous for a change. Animals always improve on it very rapidly. An advantage in this crop is that it comes off so early that another crop may readily be raised after it. It should be seeded one and a-half to two bushels, last of August or first of September, and if the land is rich it will afford good winter grazing for cattle and sheep. Both it and winter oats may be seeded in the standing corn, by running a cultivator through it, then seeding and then a one-horse drag to follow. In small fields it will pay to chop between the corn to get the oats in there.

ENSILAGE.

Fodder-corn, *ensilaged*, we regard as an important crop in stock raising and improving lands. There are diversities of opinion about its value, some contending that nothing is gained by stowing it away in pits, nothing being added to its value and nutrition, they say, by preserving it in the green state. But then something is taken away by exposure to the weather when it is attempted to be cured out doors. Provender which has leached in the weather is not so nutritious as that which has been cured and housed, whatever chemical analysis may show to the contrary. Some of the chemists tell us corn-fodder, in curing, only loses its water, and that the valuable constituents are nearly the same in the dry and ensilage state. To use a homely proverb, "the proof of the pudding is in the eating," and all who have tried ensilage are convinced of its great superiority over dried corn-fodder. Who has not noticed the rapid improvement of stock when turned on green pasture after being fed on dry hay all the winter, even though it may have been hay of the best quality? There is some analogy to this in the use of salted and fresh meat in the human economy. Keep an individual on salt meat all the winter and then give him fresh meat in the spring, and we will see the great relish with which the latter is eaten and in increased quantity, and the consequent improvement in condition and strength; the same meats, beef for instance, in the salt and fresh state exhibiting the same chemical constituents. There is something in the relative nutritive value of food which chemistry cannot explain. Chemists give us the constituents of mineral waters, and artificial waters have been made by these formulas, but they have utterly failed in their similarity of action, the artificial waters not being productive of good effects. Besides this, no medical man looking at an analysis of these waters would think them capable of any decided medical virtues, and yet thousands tell us of how they have been cured or greatly benefitted by their use.

Leaving out the question of the superior feeding value of ensilaged fodder-corn, the economy and saving by its use is very decided. If we attempt to cure and house it, failure is the general result, unless great care and labor are expended in curing it. When it is cut, the longer cool nights are coming on with short days and diminished sunshine, both in duration and degree, which together with the thickness of stalks, greatly preventing its curing, and it must be left in the field or housed at great risk of its spoiling. We shall resume this subject in our next.

SEED WHEAT.—We call attention to the advertisement of Mr. Forman of a new wheat, which he offers for seed, and which has been referred to before in our pages. Some heads which have been left at our office are certainly very large and full, and its productiveness seems to be established by several years' test.

WINTER OATS.—These are offered our readers for seed by Mr. W. H. Jesse, who sends a sample from a lot which yielded 448½ bus. from 9½ seeded, and weighed 40 lbs. to the bushel struck measure, on fair quality land not heavily fertilized, and after considerable damage had been done the crops by the Army worm.

The American Farmer

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED ON THE 1ST AND 15TH OF EVERY MONTH,

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☞ At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, P. of H.
Agricultural Society of Baltimore Co.
Also, of the **Maryland Poultry Club,** Thos. W. Hooper, Secretary.

BALTIMORE, SEPTEMBER 1, 1883.

The Maryland Horticultural Society.

The annual exhibition will be held on September 26, 27, 28 and 29, at the Armory of the Fifth Regiment in this city, when a fine display of plants, flowers, fruits and vegetables is expected. Cultivators everywhere are invited to exhibit their products. In addition to the regular schedule of premiums, Mr. Robert J. Halliday offers five prizes, each of ten dollars, to the gardeners in any amateur's employ who show respectively the best six Palms, Crotons, Dracænas, Marantas and the best specimen plant, variegated or otherwise, not of the species named.

The Baltimore County Fair.

All the indications point to a very large and attractive display in every department of this exhibition, and it is now believed that the change in the date of holding it will operate favorably, both as regards attendance and deposits. The breeders of the county, as well as those beyond its limits, are expected to join in making a display of improved stock which will be unequaled in extent as well as in value and merits. A number of new features will be adopted and every preparation made for the comfort and convenience of visitors and exhibitors. The following additions have been made to the published schedule:

JUNIOR JERSEY HERD PRIZE, (SWEEPSTAKES.—The herd is to be composed of one bull and five females, all to be under two years of age. Each breeder competing will contribute $25 to this prize.

COMPETITION ON BUTTER PRODUCTION.—The Society has undertaken to provide for a test of two days (four milkings) of the butter producing qualities of Jersey and Guernsey cows. Competition is open to all comers entering registered Jesreys or Guernseys. Each entry is to be accompanied by an entrance fee of $25. The cow making the most butter in the test to receive the purse. An experienced and competent committee will supervise every detail of the test. The cream will be raised and kept in one of Mosley's creameries, and the butter churned in a Stoddard Churn.

EXHIBITION OF BEES, HONEY AND APIARIAN EQUIPMENTS.—Under the Superintendency of Mr. Charles H. Lake, there will be a special tent for the display and manipulation of bees, etc. All bee-keepers are invited to join in making an effective and attractive display in so interesting a branch as bee culture.

The New York Experiment Station.

This institution at Geneva is now fairly in operation and under the charge of Dr. E. Lewis Sturtevant, than whom no more capable and energetic director could have been found, is already beginning to show the character of the work to be expected from it. Reports are being issued showing the progress of experiments under way, and others will give later the completed results. The benefits of the investigations which will be carried on by the station will extend over a much wider territory than that of the State by whose wise liberality it was established, its bulletins being largely republished by the agricultural press. From time to time we shall present to our readers such extracts from these bulletins as are applicable to their situation, crops and methods, or interesting from their elucidation of the general principles of agriculture. The officials of the station, though nominally in charge on March 1st, only began their operations April 1st, but the vigor with which they have pushed them ahead, whilst occupied at the same time with the details of organization, is in marked contrast with the manner of public institutions as a rule, and augurs well for a successful and useful career.

Arrival of Polled Cattle.

The four Polled Angus in-calf heifers, selected for the herd of Mr. Wm. H. Whitridge, of Baltimore county, have safely reached their owner and are now in quarantine on his farm in Green Spring Valley. Three of them were prize takers at the Royal Northern and local Shows this season, and all of them have been served by approved bulls of the most popular strains. The two families of greatest repute in their native country, the Prides and Ericas, are both largely represented in Mr. Whitridge's herd, and an opportunity will be afforded of testing under the new conditions of our climate and situation the merits of a breed which certainly is awakening much favorable criticism wherever specimens have been introduced into this country.

PORTRAITS OF JERSEYS.—Mr. Samuel M. Shoemaker has temporarily decorated THE AMERICAN FARMER office with an oil painting of five head of his Jersey cattle, by the well-known artist Mr. Cecil Palmer. The group consist of the bull Forget-Me-Not, the cows Queen of the Farm, Oxford Kate, Princess 2d and the heifer Phrenore. The skill of the artist has a fine field for its exercise in the delineation of these beautiful animals, and the results he has achieved do him credit. The portraits are true to life and the grouping and general effect is very pleasing.

THE JERSEY BULL CALF advertised by Thomas P. Ellicott is a bargain to any one in want of such an animal, at the moderate figure at which it is offered.

The American Congress of Forestry

met in Montreal on August 21, and many papers were presented on subjects relating to the culture and conservation of forests. Among the members present were Dr. Franklin H. Hough, Chief of the Bureau of Forestry at Washington; Dr. Charles Mohr, of Mobile, Ala., of the Census Bureau, who assisted in preparing the forestry statistics of the Gulf States for the Census Bureau; Dr. John A. Warder, of Ohio; S. J. Russel, Crown Timber Agent for the Dominion of Canada, and Professor Albert S. Bickmore, of the American Museum of Natural History, in New York. The Committee on Forest Fires presented a report recommending, first, the reservation of all pine and spruce lands unfit for settlement for lumber purposes exclusively; second, the prohibition of the burning of brush by settlers in the vicinity of fir trees during the months of May, June, September and October; third, the division of the timber country into districts, and the appointments of police, under a superintendent with magisterial powers, whose duty it shall be to detect and punish offenders and provide for the extinguishment of fires; fourth, the cost of maintenance of this protection against fire might partially be met by the imposition of a moderate tax on those owning or leasing timber lands.

Dr. Loring, of the Agricultural Department, was elected president.

THE SOCIETY FOR THE PROMOTION OF AGRICULTURE, the membership of which is limited to forty, met on same day, this being its third annual meeting. Mr. W. J. Beal, Professor of Botany and Agriculture in the Michigan Agricultural College, Secretary of the American Pomologscal Society, and President of the Society for the Promotion of Agricultural Science, occupied the chair. Among those present at the opening were E. Lewis Sturtevant, Director of the New York Agricultural Experiment Station, who is Secretary of the Society; L. B. Arnold, Lecturer on Dairy Husbandry, of Cornell University; George H. Cook, Professor of Chemistry and Agriculture in Rutgers Scientific School, and State Geologist of New Jersey; B. D. Halstead, editor-in-chief of *American Agriculturist;* Levi Stockbridge, President and Professor of Agriculture in the Massachusetts Agricultural College, and a number of others.

Four new members were elected; Major Alvord, of Houghton Farm; Dr. Dabney, Director of the North Carolina Experiment Station; Professor C. V. Riley, of Washington, and Dr. Ormsby, of the Storis Agricultural School. Papers were read by Professor Arnold, on "The Origin of Butter Fats," by Professor Caldwell, on the "Maintenance Ration;" by Professor Tracy, on "Seed Testing and the Influence of Light and Air on the Germination of Seeds;" by Professor Gully, of the Agricultural College of Mississippi, on the "Food Value of Cotton Seed;" add by Dr. E. W. Hilgard, on the "Absorption of Moisture by Soils." Among the other papers contributed were "Mineral Constituents in Plant Growth;" "The Yellows in Peaches;" "Non-albuminoid Nitrogen in Timothy in Difierent Stages of its Growth," by Professor W. H. Jordon; on "Vaccination," by D. E. Salmon, Veterinarian of the Department of Agriculture, and others.

Select your own Seed Wheat.

Prof. A. E. Blount, of Colorado Agricultural College, states that farmers generally permit their wheat to retrograde one-eighth, whereas, if proper care should be bestowed upon its improvement by selection alone, not one would ever find it necessary to procure better seed. It only takes two years to make wheat No. 1 and pure by selection, and from three to ten to make a successful hybrid. Wheats raised upon the soil of any locality are better than those from other points for seeding. To prove this point Prof. Blount says: "I have sown—and am nicely growing now—this spring 181 different varieties, the seed of which I obtained from every country in the world. Many I received are winter wheats, which I have converted into spring wheats. Of all the samples received not one was as good, or began to be as good, as the porest I now have." In other words, by careful selection the poorest wheat now is better than the best of the original lot, and this great improvement has been made in one year. If it is desired to improve wheat, try this method: Go over the field and select the largest heads from the best stalks. Spread the grains on a table and examine each one separately, discarding all but the best formed and fullest. Next season make a seed bed, putting one seed to a hill, one foot apart each way. Hoe well and keep clean. The result will be surprising, as the yield will be larger, the grains better and the seed clean. When, by doing this on a small piece of ground, the seed is perfected, it can be sowed for a crop. Practice this anually, as there is no limit to improvement.

An Opinion on Ensilage.

Prof. Samuel Johnson, of the Michigan Agricultural College, a college that is really agricultural in its scope, gives the following as his idea of the value of ensilage, from experiments made there:

I was not at all sanguine, when we began the experiment, as to the decided merits of ensilage as claimed by many writers, but I have been much pleased with the result of the feeding. The convenience in handling the prepared fodder; the large amount that can be stored in a small place; the avidity with which cattle eat it, and thrive and grow when a meal ration is fed with it; the fact that it can be stored in a wet time, during lowery weather, when fodder could not be cured; the furnishing of succulent food for the stock during the long winters at small cost,—these are some of the reasons that led me to think the ensilaging of corn especially will prove to be a practical and profitable method of preparing food for stock. I think it may take the place of roots and be a cheap substitute for them. I am disposed to believe that best results will be secured by feeding one daily ration of dry fodder in connection with ensilage. The experiment shows that it is not a complete food ration. A meal ration adapted to the animal and the desired result, must be fed with it. The last winter was exceptionally favorable for the feeding of fodder of this character, on account of its extreme mildness, the mean temperature being about 28 degrees during the time embraced in the feeding. With severe weather the results might be less favorable.

Varieties of Grasses Necessary for Pastures.

Pastures should not consist of one kind of grass only, because (1) stock prefer a variety, going from one to the other, thus keeping their appetites whetted; (2) because the grasses having different periods at which they mature, one kind having passed its best stage, another comes to its best, and takes its place, and (3) because grasses vary in the degree of standing wet and drouth hence if one sort is injured by vicissitudes of the weather, another may be to an equal degree benefitted. It should be more the practice to stimulate pastures with special manures. This is as necessary a thing to do as to feed a particular animal freely because it is falling off in flesh. Among the best stimulants to tardy-growing grass is nitrate of soda; this may be used freely on pastures without great outlay, and with prompt and beneficial results.—*Nat. Live-Stock Journal.*

The N. Y. Experiment Station.

The following bulletin of the N. Y. Agricultural Experiment Station, the last issued, under date of August 26th, will give an idea of the interesting and useful nature of these publications. It will be seen that they deal with topics, some of which are of great importance to farmers, but with which few farmers have time to experiment:

CORN.—The past week has been one of development for the crops. The corn ears have rapidly increased in size and the pollen has all disappeared from the tassels, leaving a number of fresh silks unfertilized in every plat, so that these later formed ears are compelled by circumstances to refrain from adding their contributions to the harvest. The plat which was intended to test the value of the but and tip kernels as used for seed has done well and promises a good crop, but at date there are no appearances of the but and tip seed being either better or worse than the seed from the central portion of the ear. The plats devoted to varieties show at date striking differences, so much so as to suggest the strong probability that what variety we grow, even of kinds that are adapted to this climate and locality, must make a great difference in the crop raised. The whole field shows quite conclusively the fallacy of attempting, even if we had thus proposed, to experiment by the comparison of plats, because differences have shown themselves, not only between adjoining plats which might possibly be ascribed to manuring, but also within the plats themselves, and as between adjoining hills. The field, be it remembered, while under sod in the spring appeared strikingly uniform, and it would have been difficult to decide upon one portion being superior in quality to another, but yet there are spots here and there of stronger clay than the remainder of the field. Strangely enough we have not been able to overcome by fertilizer, or by manure, this change in the physical character of the soil. One of the plats which was excessively manured, and which, unfortunately for our own purpose, includes a swell of more clay soil, is at date, of no better appearance certainly, than an adjoining plat which received no manure, and is somewhat better than another adjoining plat which also received no manure. In another plat of nine rows, two rows of the corn are green and flourishing, the third row is scarcely as good, while the remaining rows are decidely poor. There are also other indications at date that the corn plant feeds over an extended surface, because in no one case can the row planted on the unmanured soil which separates each plat be assigned in thriftiness to either of its adjoining plats, the roots apparently having fed upon the manured soil on either side. In one case where one plat received fertilizer at the rate of 1600 lbs. to the acre and the adjoining plat received no fertilizer whatsoever, the first three rows of the unmanured plat adjoining the fertilized plat approach in appearance those of the manured plat, thus indicating that the corn roots have extended at least eleven feet in their successful search for food.

POTATOES.—Our potato studies of the week have developed some interesting results. Potatoes from which every eye had been carefully removed in the spring, and the potato then divided lengthwise, and the two pieces planted for seed, while developing no shoots as dug on the 25th, showed the formation of callosities, or tubers, upon various portions of the cut surfaces, especially in the region of the eyes along the line which marks the cambium region of the tuber, and also—an important observation—in the central region of the tuber, thus showing that there are a number of vital points distributed throughout the substance of the potato, which, under proper circumstances may be developed into reproductive growth. In some eyes removed on July 26th from the scalded potatoes, which eyes, as has been remarked in a previous bulletin, had produced an enormous number of shoots in some cases, and in other cases of small tubers, dug on the 25th, furnished some observations which are extremely curious. The eyes which had formed shoots came up well, while of those which had formed tubers, only two out of the ten vegetated. The eyes which had formed no tubers were found to have formed some small tubers, and in some of the eyes which had formed tubers, at the time of planting there was absolutely no vegetation, and yet the tubers had grown at the expense of the seed until the matter of the seed had entirely disappeared to reappear again in the newly-formed tuber, and this, be it emphasized, without any appearance of stem or leaf.

SORGHUMS.—The seventeen sorghums, planted to test their value for forage, have now attained considerable height and many have produced their heads. The plants, however, are in no case as prolific in forage as the larger-growing varieties of corn, and the yield of forage per acre will evidently be much less. Judging by present appearances, the sorghum can only be recommended for forage purposes in competition with corn in those places where summer drouths may be expected, as the sorghums seem to require far less water for their development than does corn. There may also be a gain, as yet undetermined, in the smaller and more delicate stalks, which possibly may increase the available supply of forage when fed, beyond the present appearances.

THE CABBAGES in the garden have developed quite a difference in heading, as between the varieties. Of two of the earliest cabbages, the Nonpareil has given us to date six heads in thirteen plants, while the Early Ox-heart gives twenty-three heads out of twenty-seven plants. Of Early York, but but one has headed out of nineteen plants, while Early Winnigstadt furnishes twenty-three heads out of twenty-three plants. The Early Blood-Red gives twenty-two heads out of twenty-four plants and these heads are extremely solid. Vilmoren's Early Flat Dutch has given us nineteen heads from twenty-two plants, and one small head, curiously enough, has a number of miniature heads below it after the manner of Brussels Sprouts.

The cabbage worm has been quite troublesome, and the cabbage butterfly for a long time has been seen hovering in abundance over the beds. The red cabbage seem, however, to suffer less from the worm than the green varieties, and the Early Ulm Savoy has suffered far less than many other varieties. Various insecticides have been tried but the effect has been but partial in every case, and there is hardly need of reporting the means used. Pyrethrum, which has the reputation of being a specific, has not yet been tried. It is contrary to the policy of the Station to try first the well-known remedies, as our object is rather to extend the list of remedies from which farmers may choose.

Speaking of insect pests, Low's Premium Hybrid and Marblehead Squashes have suffered the most from the borer. The Yokohama, Winter Crookneck, Canada Crookneck, Little Cocoanut, Perfect Gem and Green Striped Bergen, all varieties which are distinguished by the peculiar rich color of their foliage, have suffered but little. The Vegetable Marrow, so highly spoken of in English catalogues, both as a Summer and Winter squash, in comparison with our American varieties seem to us scarcely deserving of mention. While the plant is vigorous and fruitful, the quality of the cooked squash used as an early vegetable reminds somewhat of our Summer squashes as well as of the Winter squashes, and is decidedly inferior to either.

The Raising of Wheat in Belgium.

The Belgian farmers, as a rule, own very small farms only (*i. e.*, after our ideas); ten acres are considered to be a nice amount of land, enough to keep the owner and his family in very comfortable circumstances. This, of course, can only be done by the highest possible culture of the soil, wherein the Belgians are surpassed or even equalled by the Chinese and Japanese only. The soil of their farms is in the first place mostly a sterile, yellow sand, spontaneously bearing nothing but heather (*erica vulgaris*) and kindred plants, and it is with an untiring patience and industry, and by the application of fertilizing plants and manure, brought to a degree of fertility unheard of elsewhere, so that they are getting fabulous returns in grain. To illustrate this I will try to describe their method of raising wheat.

In the first place, the seed is, in the long winter evenings, ricked by hand. The family, chatting or singing merrily, seated around the large dining table, draw from the pile of wheat in the centre of it handful after handful, and carefully sort the wheat, so that all that is sown thereof consists of plump, sound, uniform grains, and not one seed of the Bachelor Button (*centaurea cyanus*), Coccle-weed (*agrostemma githago*), Wild poppies (*papaver rhœas*), orvensis and others, which are the pests of European grain fields generally, is allowed to remain mixed with the wheat to be sown, not to speak about chess and other grasses and weeds which are troubling our farmers.

In the fall a piece of ground of a few square rods is selected, heavily manured, spaded up smooth with a garden rake, and rather thickly sown broadcast with the picked wheat. This is done on or about September 10th, if I recollect right, and thus the seed-bed is made, whereon the plants are grown to be set out next spring. Meanwhile the field, (three acres are considered a large one) has been deeply plowed in the fall in narrow furrows, putting the soil up on edge two or three times, and when after plowing a few weeds are coming up, worked with a fine-tooth harrow; but it is finely left in the rough furrow for the freezing in the winter to thoroughly pulverize all the little lumps that may have been left, and to destroy the eggs, larvæ and chrysalides of noxious insects. When vegetation starts in the spring, the ground is heavily manured and once more plowed and harrowed. Finally it is by hand, with an iron garden rake, levelled and smoothed like a garden bed. Next it is, with an instrument expressly constructed for the purpose, marked in rows about ten inches apart, and then the planting begins. A man with a spade digs up the wheat plants from the seed-bed, where they have been all the winter. A judicious person, generally an old woman, proceeds to pull apart the clumps dug up and picks out the wheat plants to be put out in the field. By that means, only good, sound and strong plants are set out, and it becomes impossible that anything but wheat should be planted. In the field, a third person with a pointed hoe opens the marks, making furrows two or three inches deep. Fourth person follows, putting the wheat plants into these furrows about four inches apart. Number five comes next, covering the roots well with soil, and is followed by the sixth and last hand, who pats the loose soil down with an inverted shovel. In proper time the soil between the rows is stirred with a hoe, and if here and there a weed should have sprung up from the manure, it is carefully removed. They get from one hundred to one hundred and fifty bushels to the acre, they say, and I believe it for the following reasons:

FIRST.—The fields are small; the soil is very rich and carefully prepared, which is possible because of the smallness of the fields. Every wheat plant put out is in good condition, gets all the room it needs, and has every possible chance to grow; it therefore emits thirty to forty stems, each with a heavy head.

SECOND.—There are no bare places in the field, but every square foot of soil has just so many good wheat plants on it.

THIRD.—All danger of freezing out is prevented, and the eggs and larvæ of insects which when left undisturbed all winter, will go through their metamorphoses and destroy the wheat, are mostly killed by the winter frosts in the soil, which was left to the effect of the same in good condition.

FOURTH.—Noxious weeds have no chance at all.

It is true there is a great deal of work in this way of raising wheat, but all the work by hand can be done by women and children cheaply, all the more so after they have acquired the necessary knack to do it quickly, and it is another item to be considered, that the acreage is a small one, and the harvesting of three acres must needs cost less than that of eighteen, as many as it takes to raise the same amount of wheat in the ordinary way. Another circumstance cheapens the harvest and makes the success of the whole surer—that the straw, although extremely strong, never runs up very high, and therefore never lodges.

Now, why could not some of your readers try to raise wheat in this manner on a small lot, say one-fourth of an acre? American farmers generally run over too much ground, and might in this way keep a great deal more for clover and grass. The Belgians would not do it if there was no money in it.

J. THOMPSON, in *Farm and Garden*.

Utilizing Carcasses.

A cheap lot of manure may be made of an old carcass of a horse or cow, etc., which is often drawn away to the woods, to pollute the atmosphere. Do not do this, but, put down four or five loads of muck or sod, roll the carcass over it, and sprinkle it over with quick-lime, covering over immediately with sod or mold sufficient to make, with that already beneath, twenty good-sized wagon loads, and you will have $25 worth of the best of fertilizers in less than a year, and no fears need be felt in applying to any crop. One beauty of this plan is, the animals need not be moved far away, there not being the least stench. All animals which you are unfortunate enough to lose, can be utilized in this way, and be made to go a great way towards replacing them. Smaller animals, such as sheep, calves, dogs and cats, can be treated in the same manner, with about the average amount of sod or muck proportionate to their size. When possible, place three or four in one pile, as the labor of covering would be proportionately less; but it is not much work to make a heap of any animal, however large or small.—*Turf, Field and Farm.*

Cinders in the Eye.

Persons traveling by railway are subject to continued annoyance from the flying cinders. On getting into the eyes they are not only painful for the moment, but are often the cause of long suffering that ends in a total loss of sight. A very simple and effective cure is within the reach of every one, and would prevent much suffering and expense were it generally known. It is simply one or two grains of flax seed. These may be placed in the eye without injury or pain to that delicate organ, and shortly they begin to swell and dissolve a glutinous substance that covers the ball of the eye, enveloping any foreign substance that may be in it. The irritation of cutting the membrane is thus prevented and the annoyance may soon be washed out. A dozen of these grains stowed away in the vest pocket may prove in an emergency worth their number in gold.

Turnips for Stock.

A very general interest in root crops, and especially turnips, is manifest. We have recently received a pamphlet from Landreth & Sons, Philadelphia, in which it is stated that 250 acres are planted in turnips alone, and for the seed only. This is a pointer indicating the direction of the public tendency on that subject. The *Rural New Yorker* says:

Very little is said in this country about turnips on the farm, but very much might be said. Scarcely a farmer ever thinks of turning them to any account. The professors are largely to blame for this, as they have taught us in their everlasting tables, which agricultural writers quote from just as if they were authority, that turnips have no value as food, or, at least, a value so small as to be comparatively worthless. No wonder this sort of teaching, which is founded on theory, discourages farmers from attempting to raise turnips. The practical truth is that they are one of the most valuable crops. Why? Because they can be raised as cheaply as any, and can be turned to profitable account at less cost than any other cultivated crop. How? By feeding them on the ground, which requires no labor at all. Do not these two propositions present a basis for practical action which farmers should take advantage of? The turnip crop comes to maturity and is ready for use at a time when the cold has killed other green herbage, and stock is vainly trying to get a scanty subsistence from frost-bitten grasses.

A patch of turnips is most opportune at this time for all kinds of animals to feed upon. No animal will injure itself if allowed a free range in the turnip field, but every animal thus favored will show a gain and go into winter quarters with the flushness and plumpness of summer, instead of the dried-up, lank condition which usually characterizes animals in the late autumn. As fodder corn bridges over the drouths of mid-summer, so turnips are needed just as much to fill up the shortage of autumn.

If there should be any surplus, they can be turned to most excellent account, if they are "all water," in feeding the stock in winter. Pigs can be well wintered on turnips, if kept in a warm pen, and cattle and sheep can be fattened on them without any meal; and when meal is fed, the addition of a few turnips renders the meal almost doubly effective in promoting growth. It may be set down as an established fact that in stall-feeding turnips or other roots fill an important part, and I am satisfied that if more roots were fed and less meal, growth would be greater. Turnips can be spliced in so nicely in skipped hills in the cornfield and where early potatoes, beans and peas have been grown, in every vacant place; and then again, they may be made to follow grain, or a crop of clover, so that they may occupy places which otherwise would be waste, or be a secondary crop, where another has been gathered.

A Delicious Appetizer,
That ensures digestion and enjoyment of food; a tonic that brings strength to the weak and rest to the nervous; a harmless diarrhœa cure that don't constipate—just what every family needs—Parker's Ginger Tonic. *

Every day for Three Years.
ABINGDON, Va., Oct. 4, 1881.
H. H. Warner & Co.: *Sirs*—I have suffered every day for the past three years from stricture of the urethra. Your Safe Kidney and Liver Cure is the only thing to give me relief. W. T. GRAHAM. *

Sparkling Eyes,
Rosy cheeks and clear complexion only accompany good health. Parker's Ginger Tonic better than anything, makes pure, rich blood and brings health, joyous spirits, strength and beauty. Ladies try it.—*Bazaar.*

Life-Long Relief.
RICHMOND, Va., Jan. 31, 1881.
H. H. Warner & Co.: *Sirs*—Your Safe Kidney and Liver Cure has entirely cured me of kidney difficulty that had been life-long. E. H. FERGUSON. *

Baltimore Markets—September 1.

Flour.—Quiet and steady. We quote as follows: Howard Street Super, $3.25@3 75; do. Extra $4.00@4.75; do. Family $5 00@6 00; Western Super $3.25@3 75; do. Extra $4.00@4.75; do. Family $5.00@6 00; City Mills Super $3.00@3.75; do. Extra $4 00@5 00; do. (Rio Brands) Extra $6 00; Fancy Brands $6 40@7.50; Fine $2 75@3 00; Rye Flour $3 50@4 00; Corn Meal per 100 lbs. $1.95@2 00.

Wheat.—Market steady to firm. We quote Fultz 108@111c.; long berry 112@116c.; steamboat and bag lots 105@108c.; inferior 85@100c.; September 111@111¼c.; October 111¼@111¼c.; November 113c.; December 114@114¼c.

Corn.—Receipt light and movements slow. We quote: White at 58c., and Yellow 90c.; September 62¼c.; October 60@61¼c.; November 76c.

Oats.—Quiet and steady. Western mixed, 38@40c; Western White, 42@44c.; Pennsylvania 40@45c.; Maryland and Virginia 42@45c.; Southern rust proof 40.

Rye.—Offerings light. Total sales for the week of about 3,000 bushels in lots at 63@68c. for common to prime. The receipts to day were 100 bushels; market quiet, with sales of small parcels of Maryland at 65@67c. for fair to good.

Cotton.—Market quiet and dull. We quote: Middling 12¼c; Strict Low Middling 12¼c.; Low Middling 12¼c.; Strict Good Ordinary 12¼c.; Good Ordinary 11¾c.; Ordinary 10¼c.

Hay and Straw.—Hay is in liberal but not over abundant receipts, and meets with a steady regular demand on a quiet market. We quote: Cecil county Timothy at $18; New York and Western $15@16; Maryland and Pennsylvania $15@16; mixed $13@14 per ton; Clover $12. Straw is quoted at $8@9 for Wheat; $9@11 for Oat; $12@13 for long Rye, and $10 for short do.

Mill Feed.—With full receipts the market is steady at unchanged prices, which are $17@18 for Western winter Bran; $15@16 for spring—nominal, none offering. Middlings sell at $21@23 for medium and 23@24 for heavy. We quote City Feed at $20 per ton for Middlings, and $19 for Brownstuffs.

Seeds.—New Timothy is arriving freely, much of it badly weather-beaten; sales in a jobbing way at $2 60. There is a fair jobbing demand for Clover-seed, old crop at 9c.; lots for shipment may be quoted a fraction less. Orchard Grass $1.50@1.75; Kentucky Blue Grass $1 50; Red Top $4.25@4 50 per sack of 6 bushels.

Potatoes.—The market for Irish is dull at $1.50@2 25 per brl.; Sweet $2.25@2.00.

Provisions.—A quiet, firm tone in the market, and a lively order trade. We quote packed lots as follows: Bacon clear rib sides 16¼c.; bacon shoulders 12¾c; bulk clear rib sides 14¼c.; bulk shoulders 11¼ cts.; bulk long clear 14¼c. Mess Pork $24 00 for new. Lard, refined, tierces and brls, 14c.; in half barrels and tubs 15¼c.; canvased hams, 11-lb, 16c.; uncanvased 11-lb. 15¾c.; small breasts 16¼c.; pork strips 12¾c.; short clear shoulder blades 13¾c.; uncanvased beef 16¼c.

Butter.—Steady with a firm market. We quote as follows: Choice New York State at 24@26 cts.; do fancy creamery 26@28 cts; do prime to choice 23@25c.; Western, choice 18@20 cts; do good to prime, 15@17 cts., and Near-by receipts, 15@18 cts.

Cheese.—The receipts are fair, and the market is steady, with good demand. New York State is quoted at 12@12¾c. for choice, and 11¼@12 for good to prime, and Western at 10½@11c. for choice, and 9¼@10c for good to prime.

Eggs.—Receipts are fully equal to the demand, but the market is firm at our quotations. Sales of fresh stock at 19@20c. per dozen.

Poultry.—Receipts are liberal and the demand is only fair. Old Chickens are in good supply at 10@11c. per lb.; spring Chickens at 13@14c, the latter price for those weighing 1 to 1½ lbs.

Wool.—Receipts continue to be small as the season advances, and, with generally light stocks, prices slightly off, as follows: Unwashed, fair to choice, 25@30c.; tub-washed 34@39c.; pulled Wool 30c.; fleece washed 32@35c.; merino, unwashed 25c. Trade is generally quite.

Tobacco.—The market is firm for good grades of which the supply is rather light at present. Inferior lots are neglected. The demand for Maryland is quite active, all the foreign buyers taking part in the movement, though the business is mostly for France and Germany. We quote: Maryland inferior frosted $2 00@3.50; do sound common $4.00@5.00; do good common $5.00@6.00; do middling $6 50; do good fine red $8.50@10 00; do fancy $10.00@15 00; upper country $4.00@10.00; do ground leaves $3@8.

Live Stock.—*Beef Cattle.*—Market active although prices declining. We quote as follows: Best $6.50@7.00; that generally rated first quality, $5.75@6.50; medium or good fair quality, $4.75@5.75; ordinary thin steers, oxen and cows, $3 00@4 25; extreme range of prices, $3 00@7.00; Most sales were from $4 75@6.25 per 100 pounds. *Hogs.*—The receipts are about equal to a moderately good demand, and prices are higher. We quote corn-fed hogs at 11@11¼c., with a few extra at 12c., and grassers at 10@11c. per lb. net and hard to sell. *Sheep and Lambs.*—Trade is very slow, depending wholly on the home demand, which is quite slack, the decreased supply being fully equal to and in excess of the demand. We quote butcher sheep at 3@5¼c., and lambs at 4@6c. per lb. gross, very few selling at the latter price.

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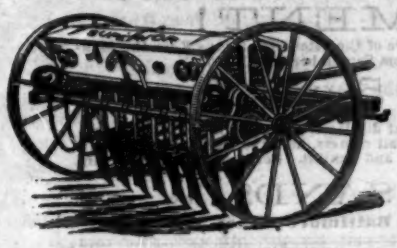

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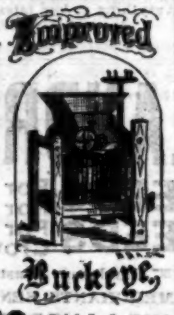

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So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers AS MANUFACTURED BY HIM, continues coutinues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.

The above are the most concentrated FERTILIZERS ever offered the Farmer—combining all the stimulating qualities of Peruvian Guano, and the ever-durable fertilizing properties of Bones, in fine, dry powder, prepared expressly for drilling. It is the universal opinion of the Farmers of Maryland and Virginia, after over twenty years experience in the use of the *Excelsior manufactured by me*, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

With my present advantages and superior facilities for Manufacturing I challenge competition with any Fertilizer sold in the United States in QUALITY, MECHANICAL CONDITION and PRICE.

By strictly adhering to my *Original Formulas*, using only the purest concentrated materials, and *superintending in person the manufacture—as for the past twenty-four years*,

UNIFORMITY OF QUALITY IS GUARANTEED.

☞ Farmers to secure the ONLY GENUINE EXCELSIOR and PHOSPHATE, prepared according to my *original Formulas established in* 1858, should see that every Bag is branded as above, with the ANALYSIS and MY NAME IN RED LETTERS.

J. Q. A. HOLLOWAY,
ORIGINATOR AND MANUFACTURER,
107 McELDERRY'S WHARF, Baltimore, Md.

To FARMERS & STOCK OWNERS

THE ATTENTION OF FARMERS, STOCK OWNERS DAIRYMEN AND POULTRY KEEPERS is called to the *SPECIALTIES* made by

The Retiker Manufacturing Co.

1. The Indian Condition Powder.—Unlike many powders now on the market, which act only as a stimulant, these powders, an entirely vegetable compound, possess the qualities of a *tonic—invigorating* and *developing* the natural powers of animals, and being a mild purgative, keep the system in a healthy condition, enabling the animal to do more work and to resist the approach of disease. To dairymen these powders are invaluable, largely increasing the yield of milk, enriching the cream and adding greatly to its butter-yielding properties. When used on dairy farms it has everywhere given most complete satisfaction.

2. The Indian Ointment.—For the cure of cuts, sores, and all skin diseases on man or beast. The healing properties of this ointment when applied to sores of the longest standing are perfectly marvelous, allaying the inflammation at once and working a cure after a few applications.

3. The Retiker Chicken Food. For prevention and cure of all diseases incident to poultry yards. Poultry keepers find, after brief trial, a very large increase in the production of eggs, and marked improvement in the weight and appearance of fowls. As a promoter of growth in young fowls it has no equal, keeping them in health and free from vermin.

4. The Shepherd's Lotion.—A chemical preparation for prevention and cure of scab, rot, &c., in sheep and swine. This preparation needs only a trial to prove its worth.

One-pound box samples of the Condition Powders or Chicken Food, or a sample box of the Ointment, will be forwarded to any address, post paid, on receipt of 25 cts. in stamps or currency. Address for samples or circulars, **The Retiker Manufacturing Co.**, 1704 Wylie Street, Philadelphia, Pa.

REGISTERED SHORTHORN BULL FOR SALE.

DUKE OF HAMILTON No. 35111, Vol. 19, A. S. H. H. B. A sure breeder, kind and gentle, will be sold low, as his owner has no further use for him.

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40 RAM and EWE LAMBS, sired by "Royal Sherborne" and other fine rambs; also, Yearling Rams and Ewes of all ages. Imported "Baron Thame" of 23½ lbs. fleece at the head of my flock—whole flock as Yearlings average 12 to 20 lb. fleeces.

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WHO offers for sale upwards of 12,000 acres of land lying in one of the most desirable regions of Eastern Virginia. Catalogues sent on application.

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An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

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For Dyspepsia, Nervousness, Bilious Attacks, Headache, Costiveness, and all Diseases of the Liver and Stomach.

ARE DECIDEDLY THE MOST POTENT REMEDY THAT CAN BE USED.

It is not an intoxicating beverage, and certainly would never be used as a pleasant substitute for alcoholic stimulents, but it is truly a valuable Family Medicine, which has been used for many years by large numbers of our citizens with the most unfailing success in all the above complaints. Try it.

25 Cents a Paper, or $1.00 a Bottle.

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Baltimore, Maryland.

LANDRETH'S BLOOMSDALE SWEDE OR RUTA BAGA

Is the result of critical selection, and has PROVED to be, unquestionably, the most desirable of all known strains of

PURPLE TOP YELLOW RUTA BAGA.

The foliage is not superabundant, the shape is nearly globular, the crown deep purple, and the flesh is rich yellow. Also,

Amber or Yellow Globe Turnip.
Aberdeen or Scotch Yellow Turnip.
Pomeresan White Globe Turnip.
Purple-top White Ruta Baga Turnip.
Strap-Leafed Garden Turnip.
Hanover or Long White French do.
Yellowstone Turnip.
Early White Flat Dutch Turnip.
Red or Purple-top Flat Turnip.
Cowhorn Turnip.
Early White Egg Turnip.
Large Early Red-top Globe Turnip.
White Norfolk Turnip.
Seven-top or Forrester Turnip.

Every Farmer should sow Turnip Seed. A good stock of turnips is the best and most economical food for cattle during the winter and early spring months. Also, turnips grown on the ground and plowed in, make a very valuable manure. Illustrative and Descriptive Catalogues free on application.

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— OF —
The Popplein Silicated Phosphate Co.
Of Baltimore, Md.

THE
Popplein Silicated Phosphate,

☞ *Forming a complete Mineral Manure, and proved by the experience of the past five years to be specially adapted to light, loamy lands, or those containing vegetable matter.*

ANALYSIS.

Moisture, at 212° F.	5	to 8	per cent.
Available Phos. Acid	9	to 11	"
Insoluble " "	1	to 3	"
Soluble Silica	15	to 18	"
Potash K. O.	2½	to 4	"
Magnesia	2	to 3	"
Soda	2	to 3	"

☞ **This Brand put up specially in Ten-pound Boxes, for use upon GRASS LAWNS and FLOWER BEDS. There is nothing to equal it.**

Price, 50 Cents per Box.

ACTIVE Ammonia'd Bone Phosphate

Recommended for all Stiff Lands.

ANALYSIS.

Moisture, at 212° F.	10	to 12	per cent.
Organic Matter, capable of producing Ammonia	2	to 2½	"
Soluble Phos. Acid	6½	to 8	p ct.
Reverted "	8½	to 4	"
Total Available Phos. Acid	10	to 12	"
Insoluble Phos. Acid	3	to 4	"
Total Bone Phosphate	30	to 34	"
Potash K. O.	2½	to 3	"

Alkaline Bone Phosphate.

ANALYSIS.

Soluble Phos. Acid	6	to 7	per cent.
Reverted "	5	to 6	"
Total Available	11	to 13	per cent.
Insoluble Phos. Acid	1	to 2	"
Total Bone Phosphate	26	to 30	"
Potash K. O.	2	to 3	"
Soda	2	to 3	"

Dissolved Bone Phosphate,

Or Acidulated South Carolina Bone.

Containing 12 to 15 per cent. Available Phos. Acid

THE POPPLEIN SILICATED PHOSPHATE CO.

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FRUITS & ORNAMENTAL TREES, SHRUBS, &C.

200,000 Apple Trees, of all the old and new well-tested varieties, Standard and Dwarf Pears, Cherries, Plums, Peaches, Apricots, Damsons, Evergreens, Shade Trees and Shrubbery of the rarest sorts. Asparagus Roots, Grape Vines, all leading varieties of Strawberries, Raspberries, Blackberries, &c.

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☞ Send for Price List before purchasing elsewhere.

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Pocklington, Duchess, Lady Washington, Vergennes, Moore's Early, Brighton, Jefferson, etc. Prices reduced. Also other Small Fruits and all older varieties Grapes. LARGEST STOCK IN AMERICA. Extra quality, Warranted true. Cheap by mail. Low rates to dealers. Illustrated Catalogue free. T. S. Hubbard, Fredonia, N.Y.

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Combines all the requisites of a complete fertilizer. Especially recommended for the wheat crop.
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FOR SALE.

REGISTERED CALVES, tracing to such bulls as Lord Rex 1413, De Lancy 2234, and Watts 2618, the two first combining the blood of Albert, Splendid, McClellan and Pansy 8. The excellence of LORD REX, now at the head of my herd, is everywhere conceded. My herd took at the Baltimore County Fair of 1881 the Special Jersey Herd Prize of $100, and five other First Prizes, the judges being John V. N. Willis, Esq., of New Jersey, and Colin Campbell, Esq., of Pennsylvania, and the conditions of competition unusually exacting.

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I have secured the only cargo of

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in the United States direct from PABELLON DE PICA, the richest deposit of Peru, containing 12 per cent. of Ammonia, also a full supply from LOBOS' deposits, containing 5½ to 6 per cent. of Ammonia, which I offer for sale direct from ship or warehouse.

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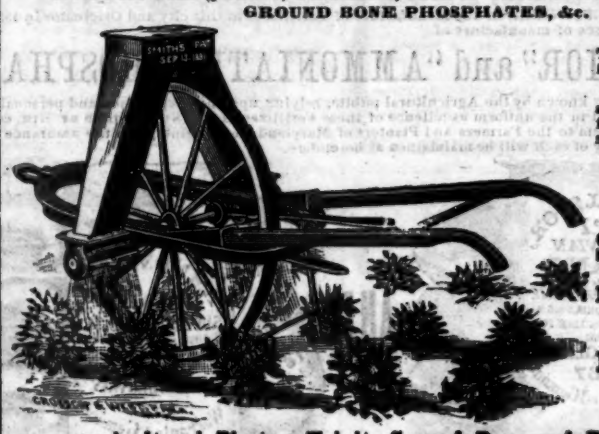
Suited for Fine (powder) Fertilizers, such as CARBONATE OF LIME, or for GROUND BONE PHOSPHATES, &c.



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Now is the time to apply it, after first mowing and before fall plowing—or directly after sowing or with the seed.

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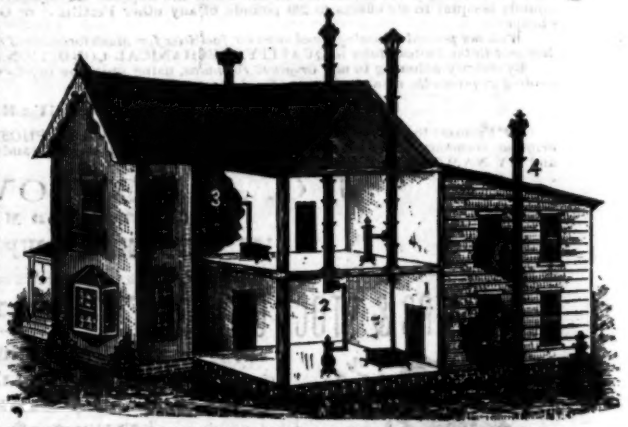

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ARE prepared, with great care, from medical plants; are *coated with sugar*, that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver, thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 28, 1859.—*Dr. Gilpin:* After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them, not only to my patients but the entire medical profession. Yours truly, J. M. WISTAR, M.D.

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Island Valeur, 5514.

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OF BALTIMORE, MD.

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Over the Firemen's Insurance Company.

THIS COMPANY INSURES

HORSES, MULES AND MILCH COWS

Against Death by Disease or Accident.

IT IS AN INSURANCE COMPANY, NOT AN ASSOCIATION.

Makes Yearly Reports to the Insurance Department of the State of Maryland.

PLAN MUTUAL.

ALL STOCK inspected by the Company's inspectors before policies are issued. For particulars send to the Company's office for circular, which gives all information as to plan, cost, etc. *President*, ROBT. S. CORSE, formerly of Clairmont Nurseries. *Vice President*, WM. B. SANDS, Editor AMERICAN FARMER. *Treasurer*, GEO. W. S. HOFFMAN, of W. H. Hoffman & Sons, Paper Manufacturers, Baltimore county. *Secretary*, ELI W. FREE.

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And to-day there is not a single fertilizer attachment possessing any degree of popularity in the United States, that we have not proven and rejected or can supply on our drill.

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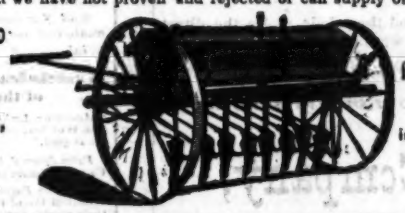
THE EMPIRE
OR MARKS,
FORCE FEED (so-called),
We keep in stock.



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NICKEL PLATED, NON-CORROSIVE,

SECTIONAL METAL-BOTTOM DETACHABLE DISTRIBUTOR,

Readily adjusted to amounts, Easily kept clean, Simple, Durable, Always in order for business, Using Continuous Solid Steel Axles, Double Reversible Steel Points, Double Force-Feed Distributors, and a practical

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Perfectly Adjustable to Quantity, No Drizzling or Wasting of Seed, Positive in Distribution, Operating in front or rear at will. Each Drill furnished with Double Registering Surveyor, Davis' Tube Shifter, Whiffletrees and Neck-Yoke.

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PLANTS FIELD CORN OR BEANS

In drills as perfectly as the special drills manufactured for this work.

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FULLY WARRANTED.

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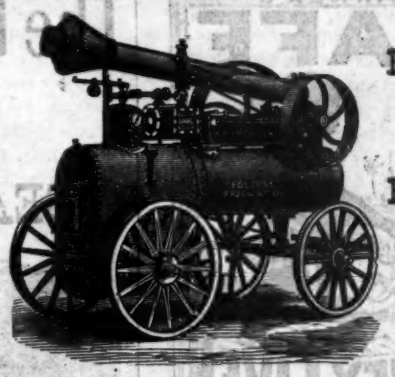
FIRST PREMIUM WHEREVER EXHIBITED.



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Buffalo Pitts Thresher and Cleaner,

The old standard, and still ahead of all competitors.

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A Full Line of Harvesting Machines, adapted to the wants and taste of Farmers any and everywhere.

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ORDER DEPARTMENT.—Gentlemen's Clothing and Shirts, of any material and style, made to order with prompt and careful attention, and strict reference to the established reputation of the house for *TASTEFUL AND SUBSTANTIAL CLOTHING*. Prices guaranteed to be lower than merchant tailoring establishments generally. Their stock of BOYS' CLOTHING, from three years old up, is unsurpassed. Samples of material, with directions by which any one can measure, and prices, sent by mail when desired.

GEO. F. SLOAN & BROTHER,

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